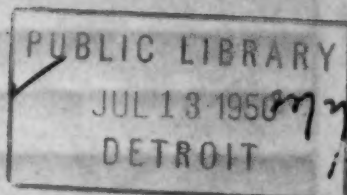


TECHNOLOGY DEPT.

# PURCHASING

JULY, 1950



Cover photo, W. N. McPhee ...	see page 71
TABLE OF CONTENTS .....	page 65
Who Contacts Suppliers? .....	page 72
Contract Renegotiation .....	page 84
Central Stores Operation .....	page 99
New Products & Ideas .....	page 120
Office Equipment Section .....	page 149

A CONOVER-MAST PUBLICATION • 50 CENTS

JR v.29 July-Sept. 1950

# A feather for MAYTAG'S cap

**Production record—  
more than 6,000,000  
washing machines**



## ...and one for TEXACO'S

**E**very Maytag Washer shipped has a Texaco lubricant in its crankcase . . . and, on the Maytag production line, more Texaco oils and greases are used than any other brand. Texaco Lubricants and Texaco Lubrication Engineering Service have been Maytag "partners" for more than ten years.

This is in line with the quality standards that govern Maytag production . . . for only through highest quality, consistently maintained, could The Maytag Company, Newton, Iowa, have built more than 6,000,000 washing machines — far more than any other manufacturer.

The part that Texaco Lubrication Engineering Service plays is important, too. As new washer designs are developed, new lubricant requirements arise . . . and Maytag and Texaco engineers work together to meet them. Increased production, improved performance, and lower unit costs are among the resultant benefits.

Enjoy these benefits in your plant. A Texaco Lubrication Engineer will gladly help you. Just call the nearest of the more than 2,000 Texaco Wholesale Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.



## TEXACO Lubricants, Fuels and Lubrication Engineering Service

*Arch.*



# Guard Against Atmospheric Hazards...

WITH

## Century

# PROTECTED MOTORS



Drip Proof



Splash Proof



Totally Enclosed Fan Cooled



Explosion Proof



### ALTERNATING CURRENT MOTORS

#### POLYPHASE

Squirrel Cage Induction—1/6 to 400 H.P.  
Wound Rotor Motors—1 to 400 H.P.  
Synchronous Motors—20 to 150 H.P.

#### SINGLE PHASE

Split Phase Induction—1/6, 1/4, 1/3 H.P.  
Capacitor—1/6 to 20 H.P.  
Repulsion Start, Brush Lifting, Induction—1/2 to 20 H.P.

### DIRECT CURRENT MOTORS

1/6 to 300 H.P.

### GENERATORS

AC, .63 to 250 KVA  
DC, .75 to 200 KW

### GEAR MOTORS

1/8 to 1-1/2 H.P.

### MOTOR GENERATOR SETS

AC to DC, AC to AC  
DC to DC, DC to AC

Open Protected, Splash Proof, Totally Enclosed  
Fan Cooled, Explosion Proof.

Ball Bearing motors are factory lubricated for several years' normal service. Bearing housing construction permits easy re-lubrication when unusual service demands it.

To guard your production against the destructive effects of atmospheric hazards, Century offers four types of protective motor frames.

**DRIP PROOF**—meets the requirements of most installations. Use it where operating conditions are relatively clean and dry. Top half of the frame is enclosed to keep out falling solids and dripping liquids.

**SPLASH PROOF**—keeps splashing liquids out of the motor even when the frame is washed with the full force of a hose. Use Century Splash Proof motors indoors or outdoors.

**TOTALLY ENCLOSED FAN COOLED**—resists the hazards of abnormal concentrations of dusts, powders, grit, oil mists, acid and alkali fumes.

**EXPLOSION PROOF**—protects life and property in atmospheres charged with explosive dusts or vapors.

The properly selected protection with the wide variation of starting torque characteristics to choose from provides long operating life and improves the production of the driven equipment.

Century motors are available in a wide range of kinds and types—in sizes from 1/8 to 400 horsepower—for single phase, polyphase and direct current applications.

Specify Century motors for all your electric power requirements.

**CENTURY ELECTRIC CO.** 1806 Pine St. • St. Louis 3, Mo.

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# B.F. Goodrich



## One of these drives is wasting money — the other has grommet V belts

*B.F. Goodrich grommet V belts cut costs 20 to 50%*

**B**OTH of these drives are in the same plant, do the same work, get the same maintenance. When first installed both were equipped with ordinary belts. But within a few days the belts had stretched so much the motor had been moved to the end of the slide rails. Ordinary belts were tried again, but they still stretched, even more so. The photo at *left* shows how the belts looked — loose, permanently stretched, over-riding each other.

Then B.F. Goodrich grommet V belts were put on both drives. After six months of 24-hour-a-day service, they haven't stretched at all, as the photo at right shows. Here are the reasons:

**Twin grommets** — The B. F. Goodrich grommet is made by winding heavy

cord upon itself to form an endless loop. These grommets are placed close to the driving faces of the belt, make up the load-carrying section. No fabric plies to stiffen and build up heat. The B. F. Goodrich grommet V belt is more elastic, has less permanent stretch than any other V belt.

**Grommets work all the time** — In an ordinary belt much of the cord strength is lost, wasted in the center of the belt where the cords don't pull their share of the load. But in the grommet belt there are no center cords to loaf. The grommets do the work, stay at it all the time.

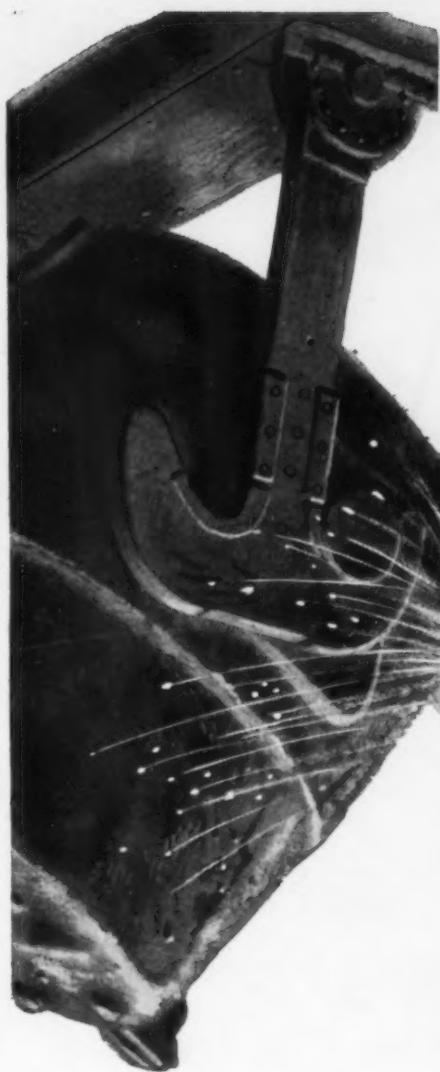
**Grommets last longer** — Laboratory and field tests show grommet V belts last 20 to 50% longer. Cause

of most belt failures is eliminated by the grommets that replace overlapping cord plies.

The twin grommet construction is a result of B. F. Goodrich research (U. S. Patent No. 2,233,294). No other V belt is a grommet V belt. Presently made in D and E sections only.

A special demonstrator "X-ray" belt has been made to show the grommet construction. Ask your local BFG distributor to bring it around. *The B.F. Goodrich Company, Industrial and General Products Division, Akron, O.*

*Grommet V Belts* BY  
**B.F. Goodrich**



# Inland HI-STEEL

makes your product  
lighter, stronger, longer lasting



## REDUCE WEIGHT

Because its high strength-to-weight ratio permits use of lighter sections, HI-STEEL makes possible important reductions in dead-weight. Less steel is needed per unit, enabling material savings up to 25%.

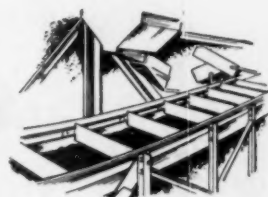
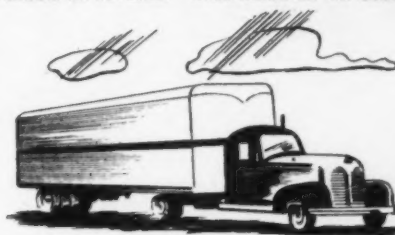
## INCREASE STRENGTH

High strength, low alloy HI-STEEL has nearly twice the yield strength of ordinary structural-grade carbon steel. It is also superior in notch toughness, fatigue strength and abrasion resistance. Because of its high strength-to-weight ratio, HI-STEEL provides greater strength with the same sectional thickness.

## INCREASE LIFE

HI-STEEL lasts longer on the job. Its tight scale resists atmospheric corrosion four to five times as long as ordinary structural-grade carbon steel. It has been known to resist 12 times as much abrasion as ordinary structural-grade steel.

And Inland HI-STEEL is easy to fabricate. It can be worked either hot or cold—punched, drawn, or otherwise fabricated—welded or riveted—with little or no change in shop practice.



**INLAND STEEL COMPANY**  
DEPT. P-7 38 S. DEARBORN ST.  
CHICAGO, ILLINOIS

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RAILS • TRACK ACCESSORIES.

## COMPARISON OF AVERAGE PROPERTIES OF HI-STEEL WITH ORDINARY STRUCTURAL GRADE CARBON STEEL

Tensile Properties (1/4" Plate)	Inland HI-STEEL	Ordinary Structural Grade Carbon Steel
Yield Point (psi)	56,000	35,000
Ultimate Strength (psi)	73,000	66,000
Elong. in 8" (%)	25	25
<b>Endurance Limit</b>		
Fatigue Strength (psi)	49,000	33,000
<b>Impact Resistance (Charpy Impact—ft. lbs.)</b>		
Temperature		
80° F	55	36
32° F	43	33
0° F	36	26
-25° F	34	6
-50° F	30	2





CORRUGATED AND SOLID FIBRE BOXES  
FOLDING CARTONS  
KRAFT PAPER AND SPECIALTIES  
KRAFT BAGS AND SACKS

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## Got a Tough Packaging Problem? Give it to Gaylord —

Gaylord is proud of their record for "solving the tough ones" and they welcome new problems that present a challenge to their ingenuity.

So, if you have a packaging problem, call the Gaylord sales office nearest you — discuss your problem in detail with the Gaylord representative — if possible, permit him to send a sample of your product in its present package to Gaylord's Engineering and Research department for analysis. You will get a full report and recommendation.



# Applies sales appeal to stainless steel ... *Automatically*

**R**ICH, lustrous finishes . . . the silent salesmen that highlight customer preference for your products . . . are now produced automatically, using Osborn Power Brushes.

Shown above are typical cut and color operations at the plant of a leading producer of polished and plated parts for the automotive and appliance industries. Trim parts formed from stainless steel are fed on an endless belt under rotating heads equipped with Osborn Buffbrushes\* using abrasive compound. High finishes on these parts are mass produced with

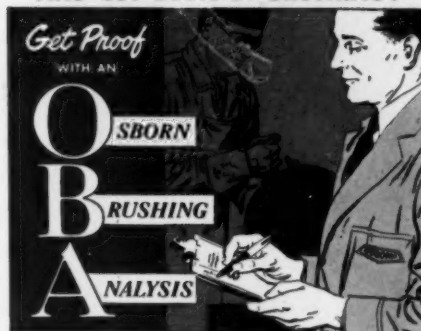
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a minimum of handling . . . at a minimum of cost.

When you polish stainless steel, cold rolled steel or other metal parts, an **OBA (Osborn Brushing Analysis)** may show you how to improve the quality of your work, increase your production and minimize rejects with power brushing. The services of the **Osborn Brushing Analyst** for all finishing and cleaning problems are backed by Osborn's extensive technical facilities and are yours for the asking. Simply write *The Osborn Manufacturing Company, Department*

306, 5401 Hamilton Avenue, Cleveland 14, Ohio.

**CAN YOU IMPROVE YOUR FINISHES AND CUT COSTS BY BRUSHING?**



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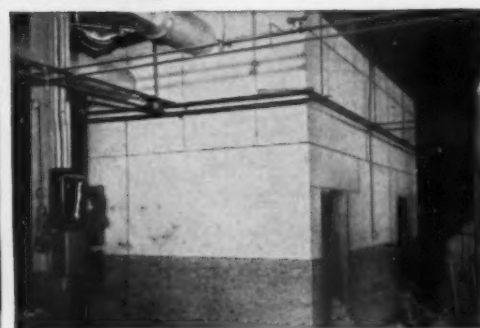
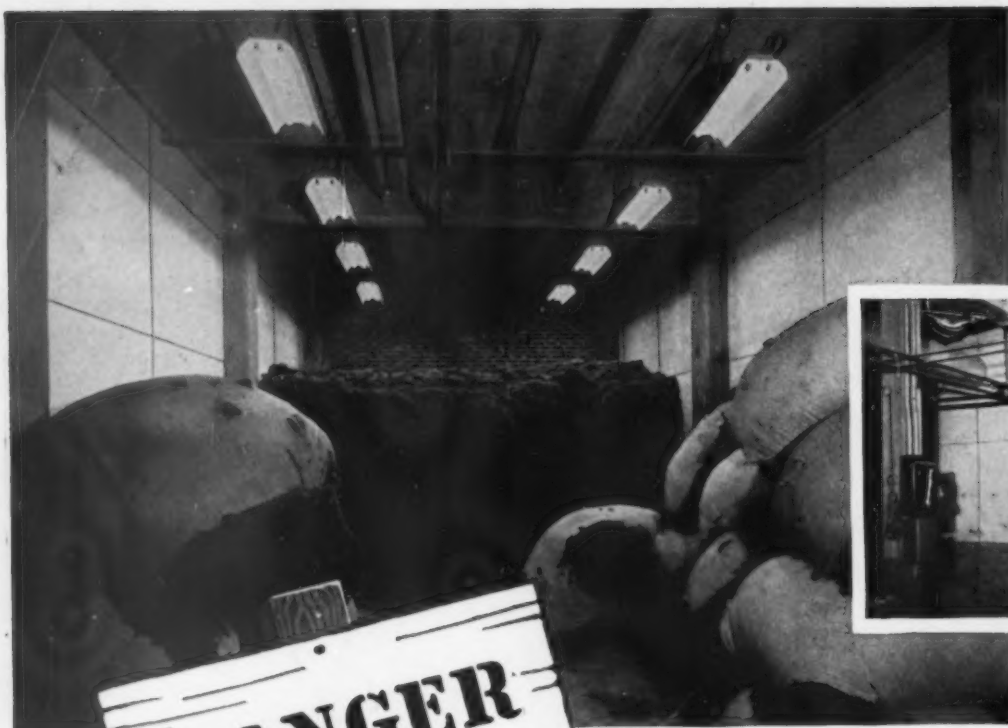
RECOGNIZED EVERYWHERE FOR

PROGRESS IN FINISHING METHODS

JULY, 1950

Want Additional Product Information? See Page 19.

7



Two of several wool bins in the Hardwick and Magee Spinning Mill—built with K&M APAC.



## ON GUARD: K&M "Century" APAC

When raw wool or processed wool is stored in bulk, there's danger of fire—not only from external causes, but also from spontaneous combustion. That's one of the reasons the Hardwick and Magee Company, nationally known carpet and rug manufacturers, chose K&M APAC for the construction of these wool bins in their modern spinning mill.

K&M APAC—specially processed sheets of asbestos-cement—resists fire effectively and dependably. The smooth, hard finish of APAC prevents fibrous matter and dust from adhering to the surface—reduces materially the opportunity for fire to spread. And K&M APAC stops the other enemies of raw materials, also—weather, rust, rot, termites, and rodents can't affect it.

You'll like the installation economies you get from using K&M APAC, too. Sheet sections are large (4' x 8') and strong, but not bulky; they handle easily, can be cut and fitted on the job, are quickly

erected. And you save on maintenance costs, too, for K&M APAC doesn't need even paint to preserve its attractive finish.

It will pay you to consider K&M APAC Asbestos-Cement Sheets for such needs as panels, partitions, sheathing, shaft casings, bins, in fact, for all flat surfaces both interior and exterior. APAC can be applied over insulation boards, wood studs, solid wood sheathing, steel or wood girts. It's adaptable and economical—the perfect answer to flat surface covering problems.

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*Nature made Asbestos... Keasbey & Mattison has made it serve mankind since 1873*

**KEASBEY & MATTISON**  
COMPANY • AMBLER • PENNSYLVANIA





Walker-Turner designing makes these

## 2 NEW PRODUCTION MACHINES

*Low in Initial Cost . . . High in Operating Efficiency*

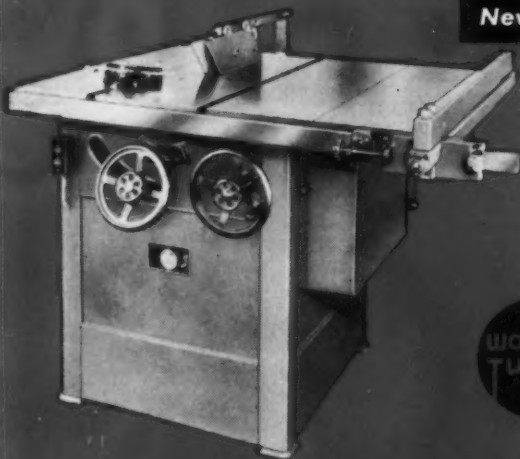


INDUSTRY will find what it's looking for in these new Walker-Turner machines—they're built with industry's needs in mind. Increased man-hour productivity . . . greater safety for the operator . . . low initial cost . . . a minimum of maintenance—these were the objectives, the goals that guide Walker-Turner engineers in designing *any* production machine.

Below are just a few of the advanced features of Walker-Turner's completely new 12" Tilting Arbor Saw and 16" Band Saw. Get the whole cost-cutting story from your dealer. Compare these machines—in engineering, performance, *cost*—with others. See why it pays to turn to Walker-Turner for metal and woodworking machines—*today more than ever!*

### New 16" BAND SAW

Now, for the first time in a band saw, all the basic parts of the machine are functional. Designed for steady production work, this new Walker-Turner 16" Band Saw frequently will pay for itself on the first job. Single speed models for wood and plastic cutting. 8 blade speeds—with standard motor 193-5692 feet per minute: with slow speed motor 126-3700 feet per minute. Table size 18" x 17".



### New 12" TILTING ARBOR SAW

Capacity 4½". Table 48" wide x 38¾" deep. 5 h.p. 3 phase motor or 3 h.p. single phase. Dado capacity 1½" wide. Saw speed 3600 r.p.m. New rip fence locks front and rear, micrometer adjustment "T" slots for miter gauge. New improved safety guard and splitter.

**SOLD ONLY THROUGH AUTHORIZED DEALERS**

SEE YOUR LOCAL DEALER—or mail coupon below for Catalog describing in detail these and the many other machines in the complete Walker-Turner line.

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Please send me copy of the new Walker-Turner Machine Catalog.

Name

Position  Company

City  Zone  State



*"We stopped both useless shutdowns and motor burnouts from Single Phasing by installing Fusetron fuses in a refrigeration compressor circuit"*

*Glenn F. Buschman, Manager  
Kirby Risk Electric Motors, Inc.  
Lafayette, Ind.*

**Mr. Buschman continues—**

"In December '47 we rewound a motor for the Rund Packing Company of Lafayette, Indiana that had been burned out on single phase.

"One week later the same motor came back, again burned out on single phase.

"We investigated and found that the motor was used on the refrigeration compressor and that starting currents were causing the 100 amp. 250 volt renewable fuses protecting the circuit to blow. When one of them blew it single phased the motor.

"The thermals in the starter were oversize and so the motor burned up.

"100 amp. FUSETRON dual-element fuses were installed in place of the ordinary fuses and the thermals changed to the proper size.

"The thermals have so far never had to operate because the FUSETRON dual-element fuses stopped the useless blows on the starting current. This automatically stopped the single phasing that had previously caused the motor burnouts."

## FUSETRON FUSES

**TRUSTWORTHY NAMES IN  
ELECTRICAL PROTECTION**

**BUSS**

### GIVE 10-POINT PROTECTION

- 1<sup>\*</sup> Protect against short-circuits.
- 2 Protect against needless blows caused by harmless overloads.
- 3 Protect against needless blows caused by excessive heating — lesser resistance results in much cooler operation.
- 4 Provide thermal protection — for panels and switches against damage from heating due to poor contact.
- 5 Protect motors against burnout from overloading.
- 6 Protect motors against burnout due to single phasing.
- 7 Give DOUBLE burnout protection to large motors — without extra cost.
- 8 Make protection of small motors simple and inexpensive.
- 9 Protect against waste of space and money — permit use of proper size switches and panels.
- 10 Protect coils, transformers and solenoids against burnout.

★ Fusetron fuses have high interrupting capacity. Tests conducted by the Electrical Testing Laboratories of New York City in December 1947 showed that on a 240 volt 50 cycle 3 phase, 4 wire circuit set to deliver 50,000 amperes, 30, 60, 100, 200, 400 and 600 ampere 250 volt Fusetron fuses on each and every test cleared the circuit without belching flame and with comparatively little noise.

FUSETRON is a trade mark of the  
Bussmann Mfg. Co.,  
Division of McGraw Electric Co.

# Fusetron DUAL-ELEMENT Fuses

## Give All-Purpose Protection

### because . . .

The fuse link element opens on short-circuit — the thermal cutout element protects on overloads — the result, a fuse with tremendous time-lag and much less electrical resistance.

They have the same degree of Underwriters' Laboratories approval for both motor-running and circuit protection as the most expensive devices made.

Made to the same dimensions as ordinary fuses — fit all standard fuse holders.

Obtainable in all sizes from 1/10 to 600 ampere, both 250 and 600 volt types. Also in plug types for 125 volt circuits.

Their cost is surprisingly low.

### Don't Risk Losses

- One needless shutdown
- One lost motor
- One destroyed switch or panel

may cost you far more than replacing every ordinary fuse with a FUSETRON dual-element fuse



**MAIL THE COUPON NOW**  
for complete information about  
Fusetron Fuses and their 10-point  
all-purpose protection

Bussmann Mfg. Co., University at Jefferson St. Louis 7, Mo.  
(Division McGraw Electric Co.)

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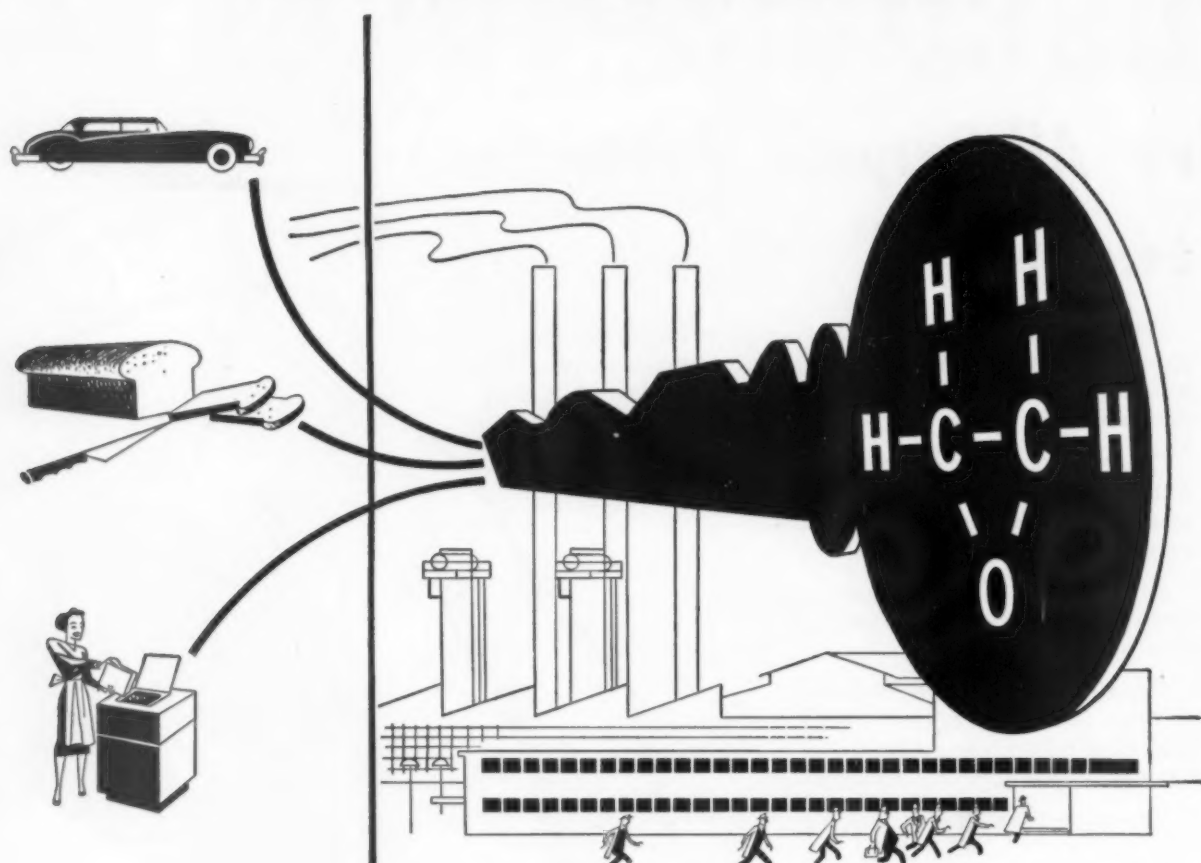
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*key to modern conveniences*

Your daily bread may be fresher and keep longer due to conditioners made from ethylene oxide. The detergents you use, the permanent anti-freeze in your automobile radiator, and some of your wife's cosmetics may all depend upon ethylene oxide.

Practically every major industry, from textile to mining, uses ethylene oxide or one of its many derivatives. Even the gas you use to heat your home may have been dehydrated by diethylene glycol—made from ethylene oxide.

Because of its ability to react readily with many other chemicals including fatty acids, phenols, alcohols, and water, ethylene oxide may well be the key component in many of the articles of your everyday living.

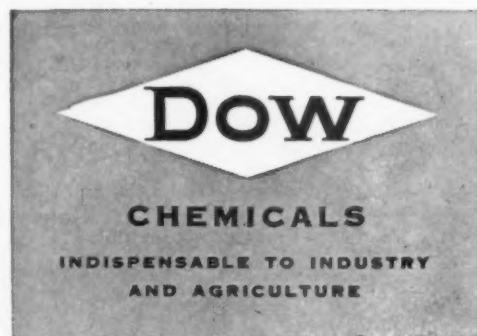
The Dow Chemical Company, as a major producer, is interested in your ethylene oxide requirements. For further information or technical assistance, write us at Midland.

**THE DOW CHEMICAL COMPANY**

MIDLAND, MICHIGAN



**DOW ALSO PRODUCES** over 600 chemicals including: caustic soda, phenol, aniline, hydrochloric acid, monochlorobenzene, propylene oxide, epsom salt, propylene glycol, ethylene glycol and other industrial, pharmaceutical and agricultural chemicals.



# PURCHASING PREVIEWS

A WASHINGTON REPORT FOR PURCHASING AGENTS

July 1, 1950.

## LUMBER AND METALS PRICES ARE CLIMBING

Prices are on the upgrade again, with no reversal likely until late fall, and some speculation that the higher price level may carry through the end of the year. This is the view of Government analysts, who report the following developments:

In the movement of prices, two trends are notable. The most spectacular is the booming price of lumber as a result of the huge market for construction lumber. Added to the heavy demand is the fact that supply was somewhat shortened due to weather difficulties in Washington and Oregon.

When the building pace slows down toward the end of the construction season, price adjustments in lumber are likely.

Second trend—less spectacular in terms of wide movement, but more significant in terms of permanency and overall effect—is the movement of non-ferrous metals and steel prices.

Variety of factors affected copper prices. First and foremost is the fact that supplies have worked down to the lowest point since April 1945. This lessening of stocks, in contrast to—and because of—the large increase in demand, is the primary reason for the upward pressure on copper prices. Another important factor has been Government purchase of copper for military stockpiles.

Similar trends are apparent in other non-ferrous metals. Aluminum price has increased for the first time in about two years, undoubtedly reflecting the strong demand for all metals. This same demand is apparent in lead, with producers allocating supplies to their customers, and several producers unable to meet their customer requirements.

Zinc of all grades is in heavy demand, reflecting the impact of new housing construction, with the many uses for galvanized metal, plus the fact that new house owners are buying large quantities of galvanized housewares.

Important difference between the volatile price movements of lumber and the more conservative fluctuations in metals, is that prices of metals are slower to adjust downward.

A further factor which may tend to keep metal prices high is the sharp increase in the price of scrap iron. The summer months provide the best period for collection of scrap, and prices usually tend down in the summer. However, the unprecedented rate of steel mill operation has made scrap scarce, and if the demand for steel continues, an acute shortage of scrap may develop during the coming winter.

## MORE WAGE HIKES ADDING MORE TO COSTS

While wage increases have not been the primary cause for the recent price boosts, the higher wage rates tend to put a floor under prices and to close the door on possible future downward adjustments.

The recent General Motors contract with the automobile workers automatically writes higher cost factors into automobile production for the next five years.

While some of the higher labor cost factors may be offset by improvements in productivity, the increase in wage rates pushes the breakeven point for profitable operation still higher, and calls for vastly increased management efficiency.

This reflects specifically on the purchasing function, as purchase of parts and materials constitutes a determining price factor in the production of automobiles.

In fact, in the present business cycle the emphasis on the purchasing function is almost equal to what it was during the war.

# How to simplify your piping jobs ...Standardize on the CRANE line

## ECONOMICAL VALVES FOR LOW PRESSURES

Keep Crane 25-Pound Iron Body Double Disc Gates in mind for services that don't require the usual 125-Pound valves. Rated at 25 Pounds Steam or Gas, and up to 50 Pounds Water, depending on size, they give superior service in a wide variety of applications. Use them inside or out; their oval-shaped body and bonnet have ample reserve strength under line stresses. Short and compact, they take minimum space in pipe lines.

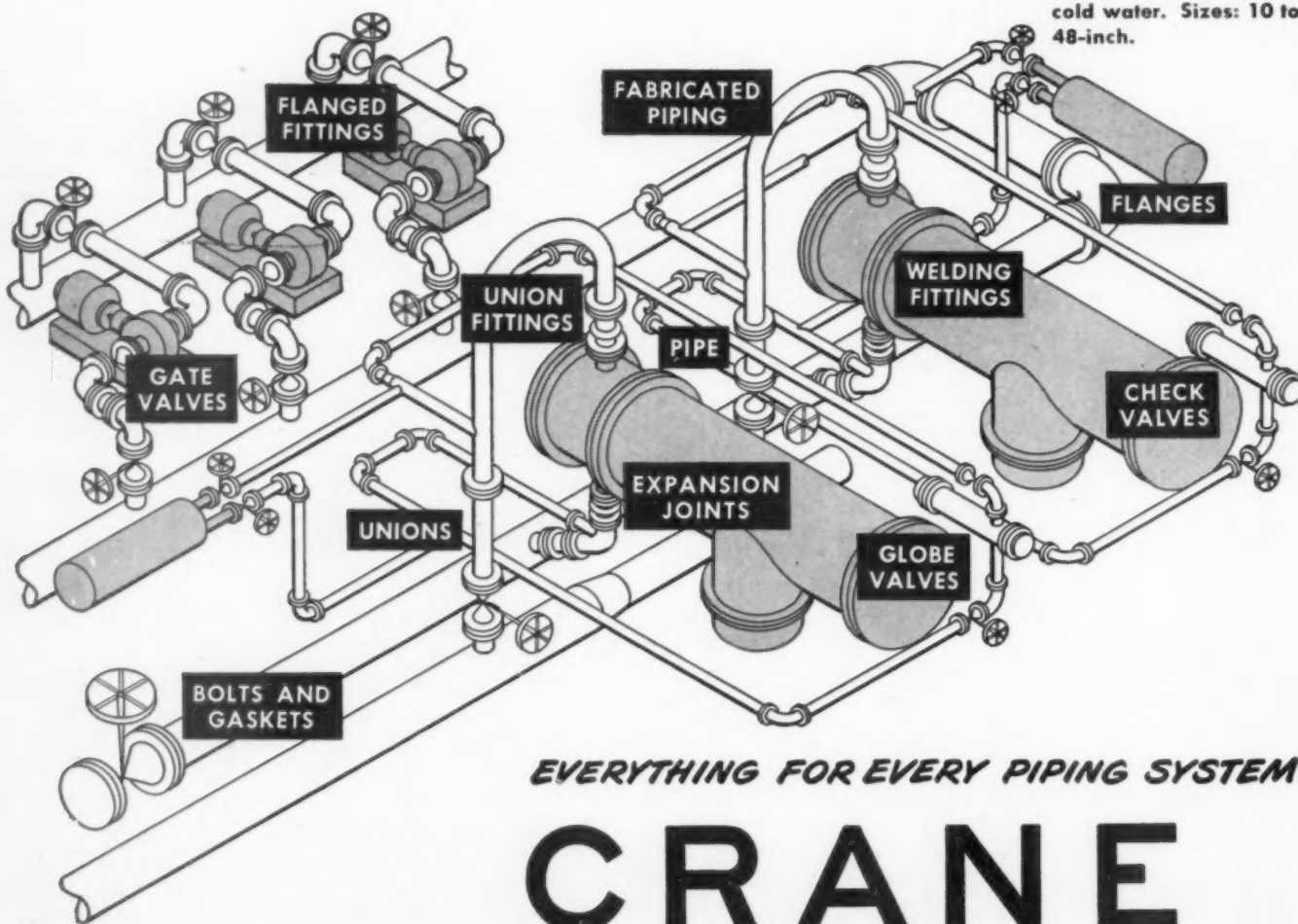
For durable, tight seating—yet easy opening—seat rings and disc faces are brass. Crane 2-piece ball-type gland maintains uniform pressure on packing; prevents binding on stem; lengthens packing life. When specified, these valves can be fitted with gears, by-pass, and clean-outs; also can be motor or cylinder operated; non-rising stem, flanged or hub ends, up to 36-in.; O.S. & Y. type with flanged ends only up to 48-in. See your No. 49 Crane Catalog.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.  
*Branches and Wholesalers Serving All Industrial Areas*



No. 793½, Outside Screw and Yoke. Working Pressures: 25 pounds steam or gas; up to 50 pounds cold water. Sizes: 10 to 48-inch.

## ONE ORDER TO CRANE COMPLETELY EQUIPS CIRCULATING, COOLING AND SERVICE WATER PIPING SYSTEMS



EVERYTHING FOR EVERY PIPING SYSTEM

# CRANE

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING



# ▲PURCHASING PREVIEWS

continued

## EXPORTS ARE DROPPING OFF

One weakness in the business cycle has been the dropping off in the volume of exports.

Lag of dollar exchange is still given as the basic reason for the lessened volume of export trade. Equally important has been the rebuilding of British and European industry into a competitive position.

British industry has been able to compete aggressively for Latin American markets, and through empire trade preferences, has maintained its trading advantage in the nations of the Commonwealth.

The drop in exports has reflected to a considerable extent in the sales of machinery and machine tools abroad.

Department of Commerce recently undertook to find out to what extent exports affect U. S. prosperity. It analyzed the relation of exports to total production of each of 81 leading U. S. commodities.

For 24 commodities, exports during 1949 amounted to more than 10% of U. S. production. Within this group, the exports of four of them amounted to over 30% of U. S. production of these items. These four were wheat, raw cotton, paraffin wax, and machine tools.

Exports of six more ranged between 20 and 30%—lard, leaf tobacco, turpentine, lubricating oil, carbon black and tractors. Exports of another 14 were in the 10 and 20% range, including condensed milk, soybeans and soybean oil, petroleum coke, tinplate and terneplate, rails, motor trucks, phenol, and cellulose acetate plastics.

## EMPLOYMENT TRENDS IN LARGE AND SMALL BUSINESS

Department of Commerce study of the importance of larger firms in providing employment shows that during the war, there was a considerable expansion of employment in the larger manufacturing companies. During the period of industrial recon-

version from a war to a civilian operation, this employment was reduced considerably, and since 1945 the trend has been up.

In terms of percentage of employment, a study of 100 of the largest companies in the country showed that the percentage of employment provided by these employers has not changed appreciably from prewar.

However, there are now more firms employing 1,000 or more workers than before the war.

At the same time, 750,000 new businesses were started since the war. Obviously, these were comparatively small ventures, with but a few employing as many as 250 workers to start.

While the number of employees per establishment is small, the number of new ventures cumulatively provides a very substantial total of employment.

The Department of Commerce findings are that the large number of new business ventures has the effect of lessening the relative importance of the very large companies as employers.

Effect of the postwar business cycle has been to stimulate the expansion of business, large and small. In terms of providing employment, the larger number of small businesses provided more employment than the expanded payrolls of the larger firms. The study provides no conclusive indication of whether there has been a greater or a lesser concentration of economic power in the postwar years.

## CAUTIOUS IS THE WORD FOR INVENTORIES

Inventory trend shows manufacturers maintaining a cautious approach, despite the extremely high level of sales.

Book value of inventory remains the same as during the first of this year, which means that in terms of physical volume, inventory at the manufacturing level is probably less than during the first of the year.

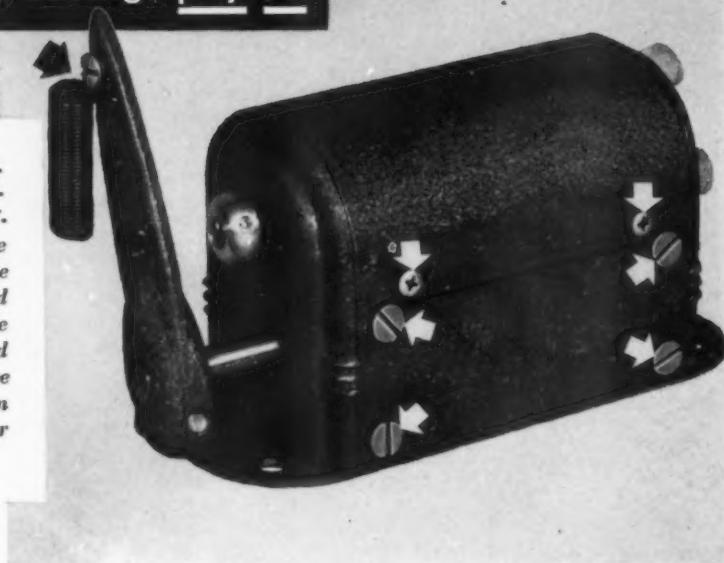
Compared with levels of a year ago, the value of inventory held by manufacturers is several billion dollars less.

In some fields of manufacturing, consumer demand has been such that manufacturers have not been able to accumulate inventory, but in general it would appear that manufacturers are maintaining as little inventory as possible.

As far as wholesale and retail levels are concerned, stocks have been building up, with retail building up faster than wholesale.

## How to make planned assembly savings pay off

**SAVING 25%—STRONGER FASTENINGS.** Durant Mfg. Co. uses several P-K products to advantage in their Productimeter. Four Type F Self-tapping Screws fasten the mounting plate to the cover frame, two Phillips Recessed Head P-K Type Z Screws fasten the cover to counter frame, and another fastens the spring to the counter arm. The manufacturer says, "Only with P-K Screws could we get the simpler, speedier, stronger fastenings we wanted." Wing Nut on end and Set Screw in arm are also P-K. Find out how you can make similar savings. Talk to a P-K Assembly Engineer.



## Don't let screw failure cancel savings



TYPE F  
(Also made with  
Phillips head)

Three steps are needed to *insure* assembly savings. First, engineer your assembly for minimum cost. Next, select the simplest, speediest fastening method. Then, if as in most cases, you find this to be with Self-tapping Screws, use the best that money can buy. For, if screws run offsize, if they break or otherwise fail, all your carefully *planned* savings are lost.

## Choose P-K® Screws ... avoid slowdowns and scrapped parts

Parker-Kalon, originators of Self-tapping Screws, learned long ago how to keep hardness and toughness properly balanced in *every* screw—learned to maintain the uniform quality that keeps assembly humming. And there's no substitute for 35 years experience.

Remember, the actual cost of screws depends, never on price, *always* on performance. Specify Parker-Kalon, and you'll see why the makers of thousands of the nation's best known products say—IF IT'S P-K . . . IT'S O. K.!

Parker-Kalon Corporation, 200 Varick St., New York 14, N.Y.  
Sold everywhere through accredited Distributors.

\*TRADE MARKS REG. U. S. PAT. OFF.



*The Original*  
**PARKER-KALON® SELF-TAPPING SCREWS**

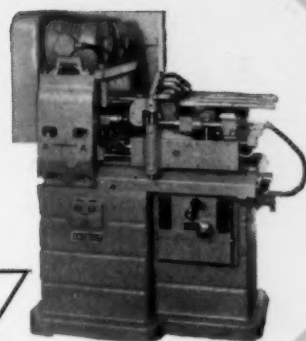
A TYPE AND SIZE FOR EVERY METAL AND PLASTIC ASSEMBLY

NEED SPECIAL SMALL SIZE  
SELF-TAPPING SCREWS WITH  
PHILLIPS RECESSED HEADS?  
P-K Type A or Z, in No. 0 or  
No. 1 diameter, with a No. 0  
Phillips Recess, can be made  
to order, quantity permitting.

# STANDARD

## *Yet Automatic!*

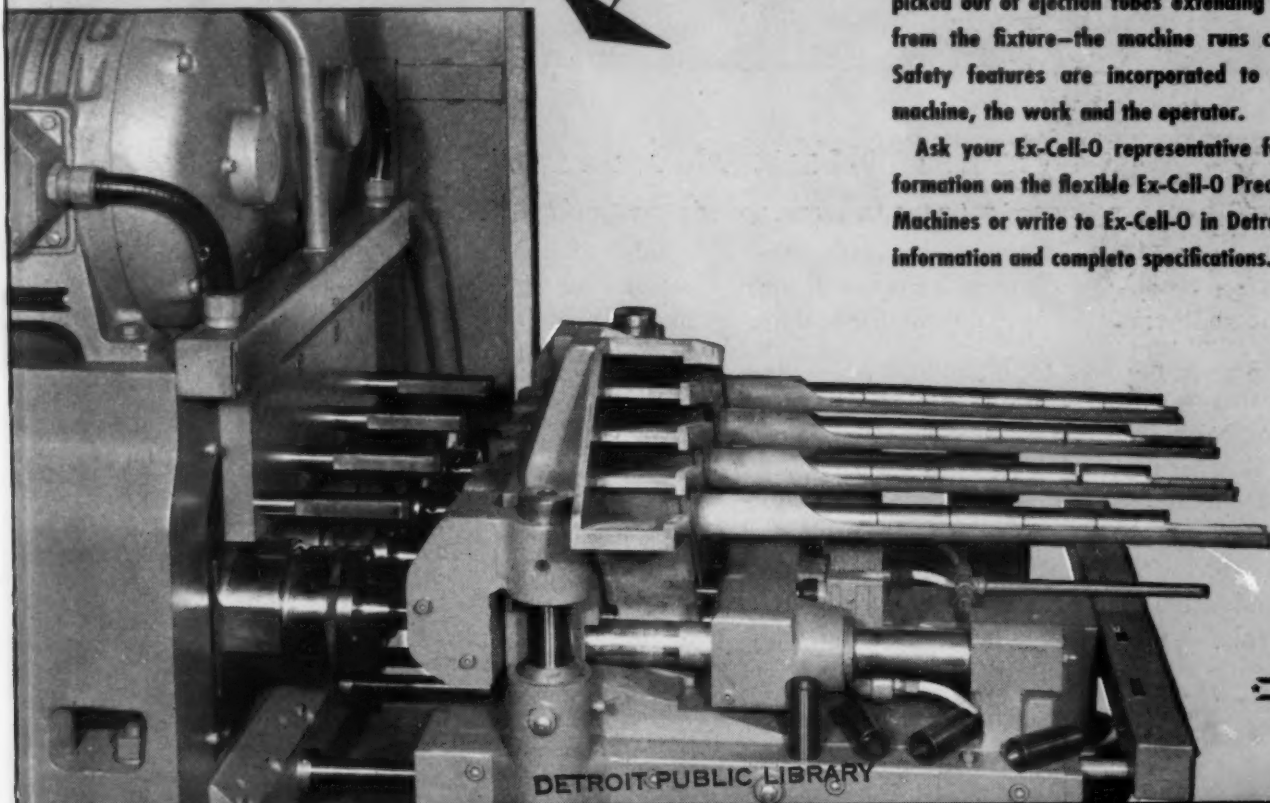
**EX-CELL-O 2112-A Precision Boring Machine  
Readily Tooled for a Variety of  
High Production Jobs**



Standard Ex-Cell-O Precision Boring Machines can be tooled either as simple, general-purpose machines or as automatic, high production, single-purpose machines. The basic machine is never obsolete—can always be re-tooled for the next job.

The machine illustrated here precision bores blind holes approximately  $1\frac{3}{16}$ " diameter and  $1\frac{1}{4}$ " deep in grey iron hydraulic components. Parts are loaded into inclined chutes and the finish-bored parts are picked out of ejection tubes extending horizontally from the fixture—the machine runs continuously. Safety features are incorporated to protect the machine, the work and the operator.

Ask your Ex-Cell-O representative for more information on the flexible Ex-Cell-O Precision Boring Machines or write to Ex-Cell-O in Detroit for more information and complete specifications.



### **EX-CELL-O CORPORATION**

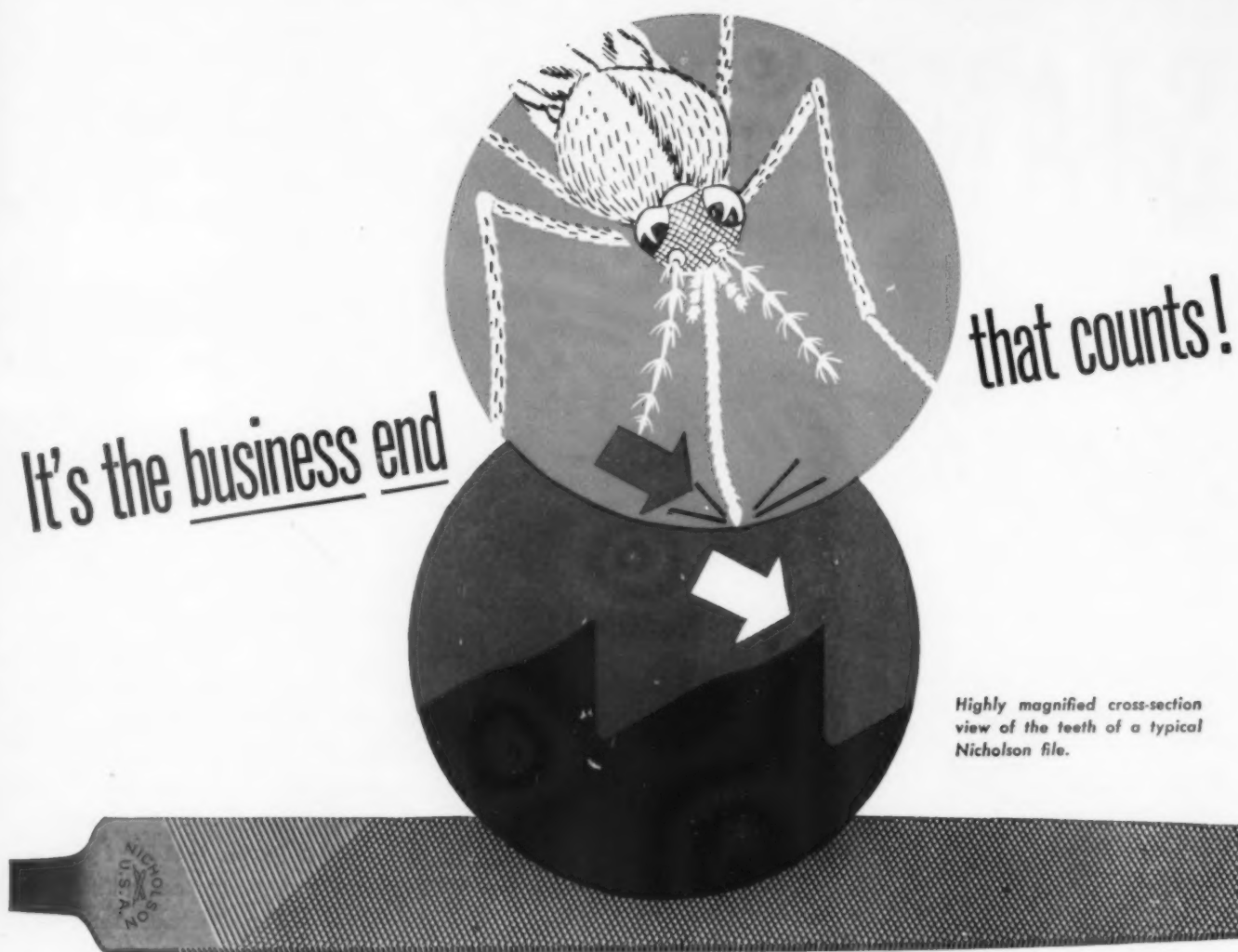
DETROIT 32  
MICHIGAN

**MANUFACTURERS OF PRECISION MACHINE TOOLS • CUTTING TOOLS • RAILROAD PINS AND BUSHINGS  
DRILL JIG BUSHINGS • AIRCRAFT AND MISCELLANEOUS PRODUCTION PARTS • DAIRY EQUIPMENT**



It's the business end

that counts!



Highly magnified cross-section view of the teeth of a typical Nicholson file.

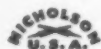
FROM the standpoint of filing production, a file is only as good as the tips of its teeth. And thereby hangs a tale! . . . a story of research and experiment that takes in 86 years of file-making experience.

How can you tell when file teeth are in tip-top shape? You can't see file-tooth quality. The surest way is to look for the trademark. If it's a Nicholson or Black Diamond, you're on the right track. For these world-famous files are made with great care in selecting steel of the right grain and quality; and with special attention to the hardening of their "business ends"—the tips of teeth that do the cutting.

Measure the stretch of your file dollars by the number of efficient file strokes you get out of a file—and your choice will inevitably be Nicholson or Black Diamond brand. Industrial distributors who value your patronage know they can hold it under the Nicholson guarantee of *Twelve perfect files in every dozen*.



**FREE—"FILE PHILOSOPHY"**—16th edition of this famous book on manufacture, kinds, use and care of files available to executive, purchasing and production heads, shop foremen, key mechanics. Send for it.



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(In Canada, Port Hope, Ont.)



**NICHOLSON . . . A FILE FOR EVERY PURPOSE**

# —Modernize—

## YOUR CATALOG AND BULLETIN FILES

Bring Your Source Information Up-to-date on New and Improved Equipment, Products and Materials. This is the first of — FIVE Pages Listing the Latest Trade Literature! Check All Five — 19, 20, 22, 24, and 151! A special listing of catalogs and bulletins on office equipment and supplies will be found on page 151. Also we will be glad to obtain information for you on any product advertised in this issue. See instructions below.

—When Writing to Manufacturers Direct, Please Mention PURCHASING Magazine.—

☐ **1. WHEEL CRUSHER** — Literature on a new portable wheel crushing unit that produces intricate and multiple forms for tools, dies, production parts, etc., at low cost, is available from Jerpbak Bayless Co., 155 Bell St., Chagrin Falls, O.

☐ **2. HYDRAULIC PRESSES** — 28-page bulletin outlines the advantages of hydraulic presses for various types of metal stamping operations, and is a guide to the selection of the appropriate size and type of press. Birdsboro Steel Foundry & Machine Co., Birdsboro, Pa.

☐ **3. CHEMICALS** — Compact descriptions of many Eastman chemicals for industry are contained in a new catalog. Specifications, properties, and typical uses are included. Tennessee Eastman Corp., Kingsport, Tenn.

☐ **4. SMALL TOOLS** — Comprehensive, 462-page, hard-covered Catalog No. 17 lists sizes and prices of all P&W precision cutting tools and companion products. New feature is inclusion of listings of solid carbide and carbide tipped cutting tools. Has 100 pages of handy tables and reference material. Pratt & Whitney, Division Niles-Bement-Pond Co., West Hartford, Conn.

☐ **5. BRONZE** — Semi-finished bearing bronze shapes and special bar stock sizes up to 19" O.D., up to 40" long solid, up to 20" long

cored, are the subjects of Bulletins 150 and 250. The bronze is die-cast by a process which requires no patterns or core boxes. Magnolia Metal Co., 18 W. Jersey St., Elizabeth 4, N. J.

☐ **6. AIR RECOVERY** — Bulletin covers Type "C" activated carbon air recovery or purification cells for reclaiming odorous conditioned air. Units are installed and serviced like standard dust filters and require no preliminary engineering design and minimum duct accommodations. W. B. Connor Engineering Corp., 114 E. 32nd St., New York 16, N. Y.

☐ **7. STORAGE EQUIPMENT** — Catalog No. 101 describes and il-

lustrates line of Starbilt storage equipment, including bins, shelving racks, counters, lockers, cabinets, work benches, etc. Units are described as "flexible to your floor plan". Star Manufacturing Co., P. O. Box 618, Kansas City, Mo.

☐ **8. WORK SUITS** — New catalog section on its work suits, made both with rubber and with Koroseal, a flexible material with many advantageous properties for this type service, is available from The B. F. Goodrich Co., Akron, O.

☐ **9. GENERATORS** — Bulletin 41-200 outlines features of expanded line of direct-current generators for lighting and power supplies. Generators can be driven by gas, diesel, steam, or gasoline engines. The Electric Products Co., 1725 Clarkstone Rd., Cleveland 12, O.

☐ **10. BLOWERS** — Dimensional information on Standardaire blowers, including engineering layout, typical application data, design data, blower number, rating, etc., is given in Bulletin No. 88. The Standard Stoker Co., Inc., 370 Lexington Ave., New York 17, N. Y.

☐ **11. MILLING CUTTERS** — Engineering Bulletin No. 50-03 covers solid carbide blade milling cutters said to offer such advantages as: no brazing troubles, reduced breakage, rapid and accurate change of blades, longer blade life, excellent chip control, etc.

(Please turn to page 20)

### READER SERVICE

All listings include names and addresses of manufacturers.

However, each one is numbered. If you want to save Multiple-letter writing, just jot down the numbers of the items you want and month of issue, and list them in a letter on your COMPANY letterhead to

Reader Service Dept.  
PURCHASING Magazine  
205 E. 42nd St.,  
New York 17, N. Y.

NOTE: This service also applies to New Products, Equipment and Supplies reported in the

New Products Section  
Pages 120-148

(Continued from page 19)

Beaver Tool and Engineering Corp., 2850 Rochester Rd., Route 1, Royal Oak, Mich.

☐ **12. LATHES**—Catalog No. L-10 contains illustrations, specifications and prices of four models of the Light Ten Lathe. Tools and attachments are also listed. South Bend Lathe Works, South Bend 22, Ind.

☐ **13. MATERIALS PUMP**—Spray application of almost every type of material is covered in a 16-page brochure showing actual uses of the Alemite "Versatal" pump. Illustrated are more than 40 actual examples of how the pump effected savings in materials, labor, product preservation, etc. Alemite Divn., Stewart-Warner Corp., 1826 Diversey Pkwy., Chicago 14, Ill.

☐ **14. LUBRICATION**—Lubriplate Data Book No. 1-50 contains useful information on specialized lubricants written particularly for those in charge of operation and maintenance of mechanical equipment. Fiske Brothers Refining Co., 129 Lockwood St., Newark 5, N. J.

☐ **15. ROPE**—An illustrated 32-page booklet containing much interesting and useful information and technical data on rope is available from American Manufacturing Co., Brooklyn 22, N. Y.

☐ **16. SWITCH CONTROL** — An 8-page engineering data folder, complete with target sheet, is designed to aid electrical engineers and others in understanding and applying the innovation in switch control known as the Push-Pull-Selector Switch. Included are detailed illustrations, descriptions and typical applications. The Arrow-Hart & Hegeman Electric Co., 103 Hawthorn St., Hartford 6, Conn.

☐ **17. GREASE FITTINGS** — All sizes of hydraulic grease fittings are described and illustrated in new folder. They are heat-treated to withstand coupler wear, and electroplated to protect from corrosion. American Hydrolube Corp., 495 Wythe Ave., Brooklyn 11, N. Y.

☐ **18. MINIATURE BEARINGS** — Technical Bulletin No. 50 details Micro ball bearings, called the first, and only, fully ground miniature bearings in the U. S. Reduction of 50% in size results in re-

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## LATEST TRADE LITERATURE

(This is Page 20)

Check Over All Five Pages!  
19, 20, 22, 24 and 151

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ductions in friction torque, surface speeds, space and weight, centrifugal forces, and moment of inertia. New Hampshire Ball Bearings, Inc., Peterborough 1, N. H.

☐ **19. CHEMICAL MOTORS** — Four-page booklet B-4687 describes the new Life-Line chemical motors for operation in atmospheres where corrosive fumes and liquids are encountered. Westinghouse Electric Corp., Box 2099, Pittsburgh 30, Pa.

☐ **20. TIMING MOTORS** — File-size 8-page Catalog No. 322 gives a comprehensive listing of electric timing motors, complete with photographs, dimensional drawings, circuit diagrams, and data on standard specifications and ratings of each unit. Haydon Manufacturing Co., Inc., Torrington, Conn.

☐ **21. TAPS** — New edition of "Tap Life" contains informative, factual material on a variety of outstanding tapping operations, showing increases in production and efficiency through use of P&W taps. Pratt & Whitney, Division Niles-Bement-Pond Co., West Hartford 1, Conn.

☐ **22. MOLDING MACHINES** — "Profits from Plastics" is the title of an illustrated booklet describing a series of H-P-M injection and compression machine installations in the plastics molding industry. Each shows the versatility of plastics and how the equipment has met each individual production problem. The Hydraulic Press Mfg. Co., Mount Gilead, O.

☐ **23. RETAINING RINGS**—Engineering specifications and data on self-locking retaining rings are contained in Bulletin No. 5. The rings require no groove, are economical and easy to assemble. Waldes Kohinor, Inc., Long Island City 1, N. Y.

☐ **24. LUBRICATION** — "Studies in Centralized Lubrication" is the title of a new booklet outlining economies and increased production effected in several industrial operations when centralized lubrication was installed. The Farval Corp., 3249 E. 80th St., Cleveland 4, O.

☐ **25. PACKAGING** — A comprehensive and fully illustrated booklet entitled "Package Engineering" is described as a user-slanted but detailed study of the technical aspects of corrugated box design and construction. Included are descriptions of typical shipping boxes made for products presenting peculiar packaging difficulties. The Hinde & Dauch Paper Co., Sandusky, O.

☐ **26. PAINT**—Heavy-duty maintenance paints are the subject of Catalog No. 501-HD. Among those listed and described are aluminum paints, acid-resistant paint, roof coatings, water and frost proofers for porous surfaces. Coopers Creek Chemical Corp., W. Conshohocken, Pa.

☐ **27. FITTINGS**—Complete data, including dimension drawings, condensed price list, packing weights, essential engineering information are contained in Catalog 50F covering cast iron and malleable pipe fittings for every pipe line use. Stockham Valves and Fittings, Box 2592, Birmingham 2, Ala.

☐ **28. FLUSH VALVES** — Illustrated catalog contains description of full line of flush valves and information on installation details, parts identification, piping design and a manual of charts and instructions. Coyne & Delany Co., 834 Kent Ave., Brooklyn 5, N. Y.

☐ **29. SAND CORE DRYER**—The Foundramatic sand core dryer, designed to cut core drying time from hours to minutes, is covered in a new bulletin. It is said to provide better quality cores at lower

(Please turn to page 22)



**CIRCUIT  
BREAKERS  
SAVE  
PRODUCTION  
TIME**



*Here's Why...*

**Circuit breakers** hold harmless momentary overloads . . . but trip quickly on shorts. Eliminate needless "down" time.

**Circuit breakers** can be easily re-set by anyone. No live parts exposed. Nothing burns out . . . nothing to replace. There's no delay.

**Circuit breakers** are non-tamperable—factory test-tripped and sealed. Circuit breakers are trip-free—cannot be held closed on overloads.

**Circuit breakers** open all lines simultaneously . . . prevent motor damage due to single phasing.

**Circuit breakers** have the high interrupting capacity and long mechanical life needed for severe industrial service.

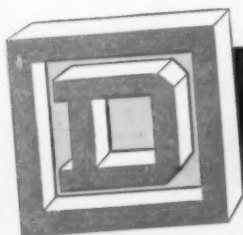
A Complete Line  
of Thermal-<sup>Coilless</sup> Magnetic  
Circuit Breakers!



Five frame sizes and four enclosure types—dust-resisting, rain-tight, weatherproof and dust-tight, explosion-resisting.

VOLTS	AMPERE RANGE				
	ML	ML 1	ML 2	ML 3	WL
250	15-50	70-100	—	125-225	225-600
600	—	15-50	70-100	125-225	225-600

Write for Bulletin 600. Address, Square D Company, 6060 Rivard Street, Detroit 11, Michigan



**SQUARE D COMPANY**

DETROIT

MILWAUKEE

LOS ANGELES

SQUARE D COMPANY CANADA LTD., TORONTO • SQUARE D de MEXICO, S.A., MEXICO CITY, D.F.

(Continued from page 20)  
fuel costs with less handling. Allis-Chalmers Manufacturing Co., S. 70th St., Milwaukee, Wis.

□ **30. SAFETY EQUIPMENT** for Sand Blasters — Personal protection equipment for shot and sand blasters is described in Bulletin No. CS-26. Featured are the abrasive mask and Blastfoe abrasive helmet, airline-type respirators with protective hoods for protection against harmful dusts and high velocity abrasives. Mine Safety Appliances Co., Braddock, Thomas & Meade Sts., Pittsburgh 8, Pa.

□ **31. MASONRY COATING**—A spray-applied plastic adhesive seal coat and colored mineral granule application for weather proofing and restoring unsightly and leaky masonry walls is the subject of a new 4-page product data sheet available from the Industrial Products Divn., The Flintkote Co., 30 Rockefeller Plaza, New York 20, N. Y.

□ **32. NUTS**—Samples of the new Tufflok Nut—a tough, one-piece cold forged nut and a treated hexagon insert—are available on a card which also contains illustrations of the assembly and the 7 machine screw sizes which can be obtained. Townsend Company, New Brighton, Pa.

□ **33. RIVETS**—Tubular and split rivets in steel, brass, copper, aluminum, nickel silver, stainless steel and Monel are detailed in a new catalog. Included are descriptions and illustrations of machines used in various types of assemblies. Chicago Rivet & Machine Co., Bellwood, Ill.

□ **34. LUBRICATION** — "Eleven Ways to Cut Production Costs" is the title of a pocket-sized primer on industrial lubrication intended to show the way to cost reductions through simplified lubrication methods from barrel-to-bearing. Alemite Divn., Stewart-Warner Corp., 1826 Diversey Pkwy., Chicago 14, Ill.

□ **35. ELECTRICAL RACEWAYS**—Catalog No. 606, 36 pages, lists, describes and illustrates the "Nepcoduct" steel underfloor electrical raceway system for either new construction or modernization of office buildings and other commer-

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## LATEST TRADE LITERATURE

(This is Page 22)

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cial structures. National Electric Products Corp., Chamber of Commerce Bldg., Pittsburgh 30, Pa.

□ **36. VALVES**—Corrosion-resistant valves for various types of service are the subject of 4-page technical information Bulletin No. 4 issued by Alloy Steel Products Co., Inc., 1300 W. Elizabeth Ave., Linden, N. J.

□ **37. GRINDER-MILLERS**—Super 50 grinder-miller and a complete line of mounts are illustrated and described in Catalog FG8. The new grinder-miller in mounted set ups is said to obtain the same speed, finish and precision formerly possible only on heavy machines, costing many times more. Precise Products Co., 1328 Clark St., Racine, Wis.

□ **38. PRESS BRAKE DIES**—New 48-page illustrated catalog shows a wide variety of press brake dies for forming metals in almost every conceivable shape: curling, beading, seaming, offsetting, hemming, channel bending, acute angles, multiple punching, and special purpose dies. Also includes a section on piercing tooling. The Cyril Bath Co., 7042 Machinery Ave., Cleveland 3, O.

□ **39. AIR POWER** — Extensive basic reference data on compressed air and gas power is available in a new 18-page booklet. It outlines how air is compressed, the machines employed, and the basic principles of the utilization of air power. Compressed Air and Gas Institute.

1410 Terminal Tower, Cleveland, O.

□ **40. TESTING SIEVES** — Four-page folder describes the Newark line of ASTM and market grade testing sieves. Also contains information on the End-Shak testing sieve shaker. Newark Wire Cloth Co., 351 Verona Ave., Newark 4, N. J.

□ **41. INDUSTRIAL TAPE**—Booklet entitled "Tape is a Tool" lists dozens of individual Polyken tapes, their specifications and uses in industrial applications. Actual sample strips of the many tapes are precisely reproduced with magnified sections which show construction details. Polyken Industrial Tape, 222 W. Adams St., Chicago 6, Ill.

□ **42. GAS UNIT HEATERS** — "Pittsburgh" gas unit heaters, Series "C", featuring cast iron heat exchangers, are illustrated and described in a folder. Specifications for 6 sizes, ranging from 85,000 to 215,000 Btu per hour are included. Automatic Gas Equipment Co., 301 Brushton Ave., Pittsburgh 21, Pa.

□ **43. REMOTE CONTROLS**—Hydraulic remote controls for industrial use are described in Bulletin 20-105. Two series of controls and available accessories, including intermediate transmitter for use at secondary control stations, are covered. Industrial Sales Section, Sperry Products, Inc., Danbury, Conn.

□ **44. CONTROL LINKAGE**—Sixteen-page brochure contains all information necessary for choosing and ordering by stock number the correct control connecting linkage and accessories to suit almost any application. The company has standardized on relatively few sizes and styles. Bailey Meter Co., 1050 Ivanhoe Road, Cleveland 10, O.

□ **45. CENTRIFUGAL PUMPS** — Descriptions of centrifugal pumps for industrial applications are presented with complete engineering data, diagrams and suggestions in Bulletin 100. Eastern Industries, Inc., New Haven, Conn.

□ **46. FLOTATION** — Technical booklet on flotation and includes  
(Please turn to page 24)

# for PROOF that General Boxes CUT COSTS... let's **CHECK THE RECORD**

No. 7105

Gross Shipping Weight  
Old Package..... 410 lbs.  
\* New Package..... 364 lbs.  
Weight Saving..... 46 lbs.

No. 7038

Gross Shipping Weight  
Old Package..... 120 lbs.  
\* New Package..... 104 lbs.  
Weight Saving..... 16 lbs.

No. 7023

Gross Shipping Weight  
Old Package..... 39 lbs.  
\* New Package..... 34 lbs.  
Weight Saving..... 5 lbs.

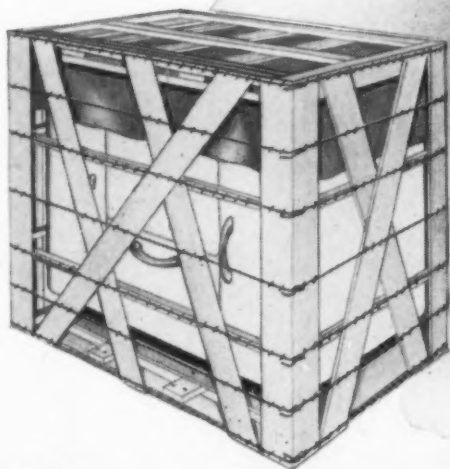
No. 7147

Gross Shipping Weight  
Old Package..... 95 lbs.  
\* New Package..... 83 lbs.  
Weight Saving..... 12 lbs.

## General Engineered CONTAINERS PROVIDE AVERAGE SAVING OF 19.75 LBS.

Here's concrete evidence of savings!  
4 widely diversified products from the  
case history files of our Designing and Testing  
Laboratories show an average weight  
saving of 19.75 lbs. Many of the hundreds  
of case histories on file show even  
greater weight savings!

Better check today on this vital subject.  
We'll be glad to help design a more  
efficient container for your product.



\* "New Packages" were designed in our  
DESIGNING and TESTING LABORATORIES

# General

★★★★★

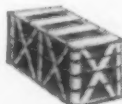
## BOX COMPANY

engineered shipping containers

GENERAL OFFICES:

48 W. Illinois Street, Chicago 10, Ill.

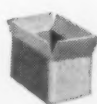
DISTRICT OFFICES AND PLANTS: Cincinnati, Denville, N. J.,  
Detroit, East St. Louis, Kansas City, Louisville, Mer-  
idian, Miss., Milwaukee, Sheboygan, Winchendon.  
Continental Box Company, Inc.: Houston, Dallas.



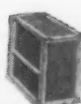
General  
Wirebound  
Crate



General  
Nailed  
Box



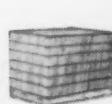
General  
Corrugated  
Box



General  
Cleated  
Corrugated  
Container



General  
All-Bound  
Box



General  
Lift Pallet  
and  
Pallet  
Box



General  
Watkins-  
Type  
Box



(Continued from page 22)

information on new, as well as familiar Hercules flotation agents. General discussion of the flotation process and its growing acceptance by industries other than mining is also presented. Hercules Powder Co., Wilmington, Del.

☐ **47. CRANE SCALES**—Use, advantages, and construction of hydraulic crane scales for measuring loads while in transit are outlined in Bulletin 501. Complete information includes load capacities, dial sizes, prizes, and data on remote load indicating or printing system. The A. H. Emery Co., Stamford, Conn.

☐ **48. FREE-CUTTING STEEL** — Revised edition of J&L progress report on "E" free-cutting steel, a new Bessemer screw stock, gives details of lengthened tool life and increased production effected by parts manufacturers through use of the steel. Jones & Laughlin Steel Corp., Jones & Laughlin Bldg., Pittsburgh 30, Pa.

☐ **49. NUT RETAINERS** — Forty-nine stock sizes of the Speed Grip nut retainer are described completely in a new booklet. Included is a description of the Speed Grip principle and the specifications of each stock size. Screw size, panel range and all dimensions of each size are listed. Tinnerman Products, 2036 Fulton Rd., Cleveland, O.

☐ **50. LIGHTING** — Booklet entitled "RLM Standard Specifications for Industrial Lighting Units", 44 pages, contains detailed specifications for 18 different fluorescent and incandescent industrial lighting units which carry the RLM label. RLM Standards Institute, 326 W. Madison St., Chicago 6, Ill.

☐ **51. MERCURY CLUTCHES** — New bulletins describe and illustrate line of Mercury Automatic Clutches. Bulletin 216 covers the clutch in general and its various applications; Bulletin 217, the clutches applied to gasoline engines; and Bulletin 218, electric motor installations. Automatic Steel Products, Inc., Canton 6, O.

☐ **52. MATERIALS HANDLING**—Sermat steel belt conveyors and power turns, which are designed and manufactured in units to be built up or rearranged as needed,

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## LATEST TRADE LITERATURE

(This is Page 24)

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are covered in a new bulletin. Sermat, Division of Peterson Products Corp., 1735 Armitage Ave., Chicago 22, Ill.

☐ **53. ARC WELDING**—Latest issue of "Hobart Arc Welding News" is a 24-page booklet of interesting photographs and articles on welding from all over the country. Many of the articles feature time and money-saving applications. Hobart Brothers Co., Hobart Square, Troy, O.

☐ **54. STAINLESS STEEL** — Carpenter's Stainless No. 20 is the subject of a new 18-page technical bulletin which discusses its corrosion resistance, workability and mechanical properties. The Carpenter Steel Co., Alloy Tube Divn., Union, N. J.

☐ **55. LIGHTING**—"The Facts of Light . . . or What Every Man Should Know Before He Gets Engaged (in Buying Illumination)" is title of an easy-to-read 16 page booklet written and illustrated by Don Herold. Problems involved in buying lighting equipment are presented in simple, straightforward terms. The Frink Corp., 27-01 Bridge Plaza North, Long Island City 1, N. Y.

☐ **56. SCALE MODELS**—Uses of plastic scale models in advertising and sales promotion are described in a new folder issued by Ideal Models Co., 17277 Moran Ave., Detroit 12, Mich.

☐ **57. TUMBLING BARRELS** — Bulletin No. XL gives complete details on type XL wet-process tumbling barrel, which can be used

for deburring and cutting down forgings, stampings, castings, and for wet ashing of plastics. Bulletin No. MU-50 covers the Tumb-L-Matic F and S multiple unit tumbling barrels for either wet or dry process. Lupomatic Industries, Inc., 4510 Bullard Ave., New York 66, N. Y.

☐ **58. COATINGS** — Data Sheet C-11 on Polyclad contains full technical information on polyvinyl chloride protective coatings. It emphasizes the fact that corrosion proofing is a process of using materials correctly as much as using correct materials. Carboline Co., 7603 Forsyth Blvd., St. Louis 5, Mo.

☐ **59. MOTORS**—Latest issue of WIP News features construction details of Wagner cast iron frame totally enclosed fan-cooled motors, which offer extra protection against corrosion. Available in ratings from 5 hp through 250 hp in both standard (type EP) and explosion-proof (type JP) designs. Wagner Electric Corp., 6400 Plymouth Ave., St. Louis 14, Mo.

☐ **60. WELDING PRODUCTS** — Four-page Bulletin RW-2 offers information on the most active items of the Ampco Weld line of resistance welding tips, wheels, water cooled holders, welding dies, welder shafts, bushings and quick-disconnect water shut-off couplings. Ampco Metal, Inc., 1745 S. 38th St., Milwaukee 15, Wis.

☐ **61. PROPANE CYLINDERS** — Folder details "Lite-Weight" propane cylinders of 100 lbs. capacity and 72 lbs. tare weight. Cylinders furnished in aluminum or red oxide ground coats, with or without caps and valves inserted, and with customer's registered mark and serial numbers at no extra charge. Harrisburg Steel Corp., Harrisburg 31, Pa.

☐ **62. INDUSTRIAL PHOTOGRAPHY**—Applications of photography in business and industry are summarized in a 16-page booklet entitled "Functional Photography in Industry". Non-technical text covers processes and techniques applicable to a wide range of activity—research, production, quality control, sales, etc. Industrial Photographic Division, Eastman Kodak Co., 343 State St., Rochester 4, N. Y.

(Please turn to page 254)



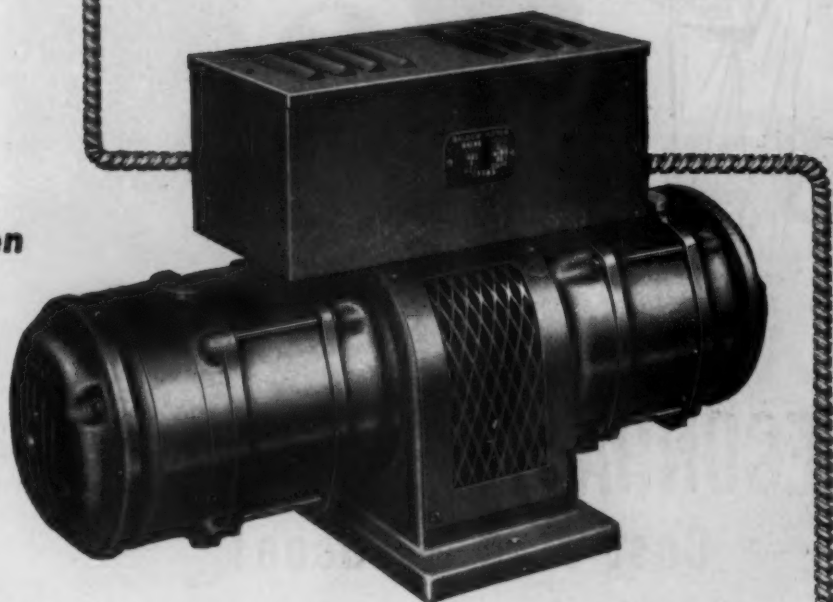
**CONTROL UNIT**  
—place it anywhere

# Here is the **BALDOR** *Simplified* **ADJUSTABLE SPEED** **MOTOR System**

for innumerable applications

from 0  
to 2400 r. p. m.,  
and selected  
speeds in-between

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dynamic braking  
and  
instant reversing



**WIDER RANGE OF SPEEDS** — from 0 to 2400 r. p. m., and intermediate speeds, quickly and positively. (16 steps forward; 16 steps reverse.)

**FULL TORQUE**—constant speed at each speed setting.

**RAPID, SMOOTH SPEED CHANGE**—even from full forward to full reverse. One simple control pro-

vides smooth speed changes and dynamic braking.

**SEPARATE UNITS** permit convenient, economical application and installation, either near-by or remote operation.

**SIZES:** ¾ hp., thru 1½ hp., Single Phase  
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Baldor Motors are sold and serviced  
NATIONALLY in over 300 trade centers  
**BALDOR ELECTRIC CO., ST. LOUIS 10, MO.**  
Motor Specialists for 30 years

Another  
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MOTOR DEVELOPMENT

ASK for  
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detailed  
data.



The Baldor Streamcooled Motor is **TOTALLY ENCLOSED**, cooled by externally-mounted fan. It can't clog.



## SECONDARY OPERATIONS Cost Less at Alcoa!

Secondary operations can make the difference between out-of-line costs or reasonable prices for screw machine products. Because they can cost you *more than primary operations* unless your screw machine supplier takes them into account at the outset.

Alcoa does just that—engineers the whole job at the start. Takes advantage of equipment specially selected for low-cost secondary work on aluminum and magnesium. Drilling, tapping, slotting, milling, press forming, stamping or marking, thread rolling, centerless grinding, and others.

That's why you can buy the best light metal screw machine parts from Alcoa at prices no greater—possibly lower—than you've been paying for run-of-the-mill work.

For a prompt quotation on your job, phone your nearby Alcoa sales office. ALUMINUM COMPANY OF AMERICA, 2130G Gulf Building, Pittsburgh 19, Pennsylvania.

ONLY ALCOA OFFERS YOU ALL  
THESE UNDER ONE ROOF—



**MEN** trained specifically in machining aluminum and magnesium alloys.

**MACHINES** handling all types of rod, bar and tubing up to 3½" O.D.—from hand machines to multiple spindle automatics.

**SECONDARY OPERATIONS**—Burring, drilling, tapping, milling, slotting, press forming, stamping, marking, centerless grinding, thread rolling, others.

**FINISHING**—Tumbling, burnishing, chemical dip, oiling, buffing, color buffing, plain or colored Alumilite\* finishing.

**FINISH QUALITY CONTROL**—Laboratory check of Alumilite finishes; regular production checking, final visual inspection.

**CONTINUOUS INSPECTION** by operators as well as inspectors. Begins with first piece inspection, continued by operator equipped with all necessary gages; process and final inspection employing statistical methods.

**BIG STOCK INVENTORY** that is adequate to initiate most jobs without waiting for mill shipment of stock.

**DESIGN AID** that can give you a better product or lower costs, or both. New orders are analyzed by Alcoa engineers for improvements or cost reduction.

**ASSEMBLY AND PACKAGING**—Alcoa is set up to turn out parts, finish, assemble, package and ship completed products (not necessarily all-aluminum) ready for immediate resale.

**MACHINED FORGINGS, CASTINGS, IMPACT EXTRUSIONS**—Gives you the advantages of one source for these parts and secondary operations on them.

**LOW COST, FAST DELIVERY**—Alcoa offers you all these at competitive prices and dependable delivery schedules.

\*Patented Process

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ELECTRICAL CONDUCTORS • SCREW MACHINE PRODUCTS • FABRICATED PRODUCTS • FASTENERS • FOIL • ALUMINUM PIGMENTS • MAGNESIUM PRODUCTS



# The cylindrical body defies distortion

## LUNKENHEIMER FIG. 2228 LINE UNION BONNET GATE VALVES

In this design of 200 lb. S. P. Bronze Union Bonnet Gate Valves, Lunkenheimer incorporates the first application of full cylindrical body sections in bronze gate valves. This construction, previously used only in higher pressure steel valves, provides great strength and maximum resistance against distortion of the valve body and seats due to internal pressure strains and other stresses. Tests made under conditions far more severe than those encountered in actual service prove that this design will not distort and will maintain initial proportions and seat tightness. In addition to the cylindrical body construction and other service-giving features, the valves are equipped with stems made of the distinctive silicon bronze alloy developed by Lunkenheimer to eliminate stem-thread failure due to wear.



Your Lunkenheimer Distributor will gladly show you how this valve's extra strength means extra service, extra value, too! Ask for Circular 534 or write direct.

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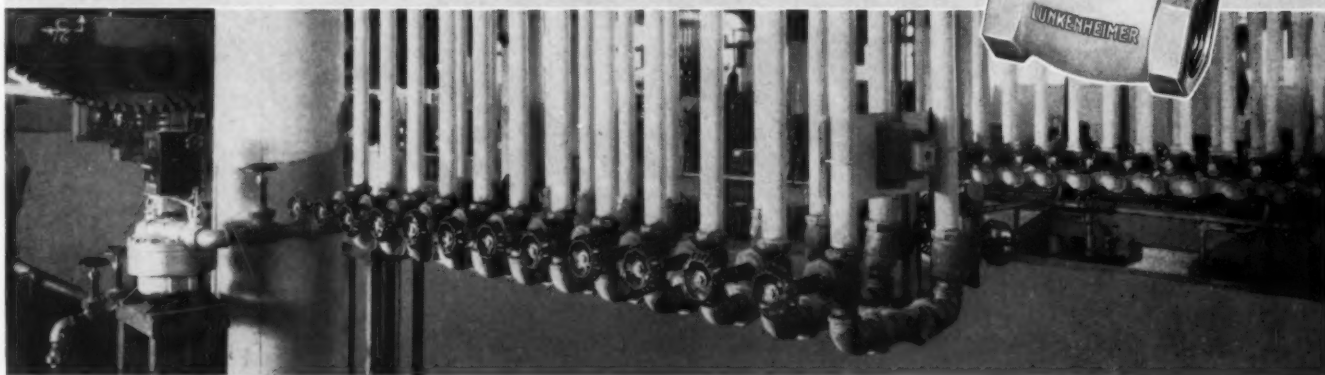
Union Bonnet  
Rising Stem  
Fig. 2228  
Screwed



Union Bonnet  
Non-Rising  
stem  
Fig. 2230  
Screwed

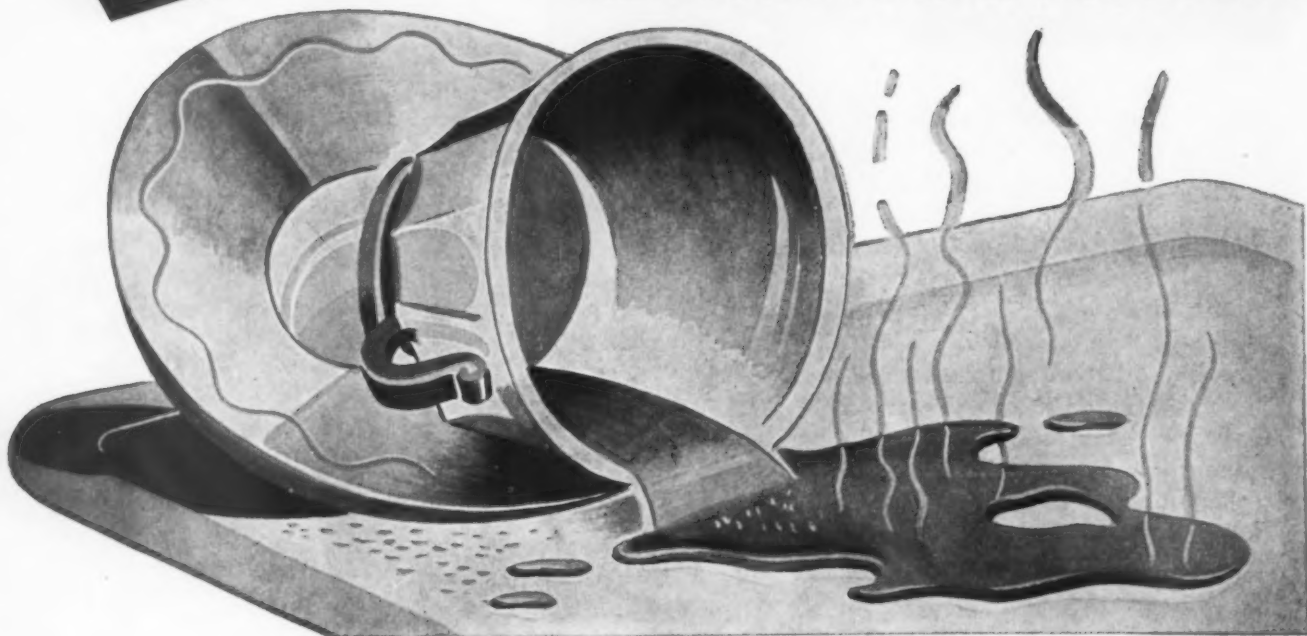


O. S. & Y.  
Union Bonnet  
Rising stem  
Fig. 2232  
Screwed



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Greatest Name in  
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# 4 BIG ADVANTAGES!

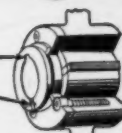


## ONE PIECE MOUNTING

Bushing and sheave go on together. One motion mounting. Alignment is easier. Sheave is on right first time.

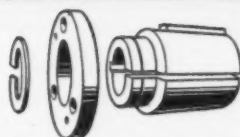
Key here  
Key here

No strain  
on screws



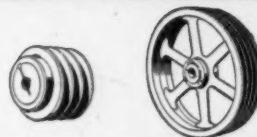
## POSITIVE DRIVE

Bushing is keyed to both shaft and sheave. No slipping. No sheared screws. No jammed bushings from bent screws.



## FULL CIRCLE GRIP

Bushing split full length with separate collar. Grips shaft full length around full diameter. No forcing or distortion. Grip easily broken. No hammering.



## WIDE SIZE RANGE

*Magic Grip* sheaves are available from 3" pitch diameter up. Style NC bushing for smaller sizes and Style C bushing for larger sizes.

# MAGIC GRIP SHEAVE

**Y**OU CAN MOUNT a *Magic Grip* sheave faster than any other sheave you can buy . . . and demount it just as fast. When you mount a *Magic Grip* sheave it runs true. It will not slip or jam. It always comes off easily.

Even if you don't change sheaves often, you should have *Magic Grip* sheaves on every drive to eliminate the possibility of shaft and bearing damage when ordinary sheaves are hammered or pried on or off.

## WIDEST V-BELT LINE

Get everything you need for your V-belt

drives from one reliable source. *Texrope* offers the broadest line of V-belts, standard and variable speed sheaves and speed changers in the industry. And you also get the extra engineering skill that comes from having more industrial V-belt installations than any other manufacturer.

Get your copy of the 144 page *Texrope* Pre-Engineered Drive Manual from your A-C Authorized Dealer or Sales Office or write for Bulletin 20B6956.

A-3022

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MILWAUKEE, WIS.

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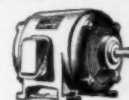
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CITY

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# F.O.B. *Philosophy of buying*

**A**PPARENTLY, in the public mind, a purchasing agent is never above suspicion. At least this is the assumption in a recent leading editorial in the Boise (Idaho) *Statesman*, vigorously combatting the proposal for a city manager form of government. The writer argues, in part, as follows:

"The one problem in connection with a city manager is the ever-present possibility of suspicion from complete authority in the hands of one man. As a purchasing agent, the city manager faces the problem of not being able to buy from every seller, and this broods trouble. Likewise the city manager, as a purchasing agent, much like the state purchasing agent, develops a group of hangers-on who, finally, drag him down with themselves, suspicion entering the picture, if not favoritism and irregularity."

Perhaps the *Statesman* editor is an exceptionally suspicious man, or perhaps he started his business life as an unsuccessful salesman. According to his conception of the buying job, the only way a purchasing agent can have a clean record is (a) to buy from everyone, thereby winning the friendship of all vendors, and (b) to conduct himself as an anti-social hermit, with a policy of having no friends whatever.

**D**O you work in an office or in an awfuss? An "awfuss" is defined in current advertising of the Globe-Wernicke Company as "a place where business is misconducted."

**B**RTAIN's labor government is as forthright as its labor organizations when it comes to dealing with a work crisis. Ordering in the troops to unload some 69 vessels at the port of London when the dockworkers went on strike in April, for the second time within a

year, Labor Minister George Isaacs commented that a large scale work stoppage at the London docks is "intolerable". Significant also is the fact that 1,000 soldiers and sailors were assigned to do the job normally carried on by 12,489 of the strikers.

**T**HE labor government's record in management efficiency is less impressive. When the trucking industry was taken over two years ago, as a part of the nationalization of transport facilities, the administrative organization consisted of a five-man board known as the Road Haulage Executive. As of January, this year, this modest beginning had swollen to a staff of 60,000, operating a complex system of 8 division offices, 31 district offices, and more than 300 local boards. At the end of the first quarter, the staff had increased to 70,000.

**L**EAVE it to the schoolmen—the National Association of Educational Buyers—to find a classical reference for their convention slogan, and to make a pun on the classics. *Caveat Emptor* is probably the most ancient bit of advice offered to purchasing agents. In the publicity for NAEB's 29th annual convention at Houston last month, the committee gave a new twist to the old saying. Instead of the standard translation, "Let the buyer beware", they advised, "Let the buyer be there!"

**W**HILE we are on the classics, we are asked so frequently for the text of the classic definition of a P. A., attributed to the late Elbert Hubbard, that we can probably save ourselves and our correspondents a lot of time by reprinting it here. That brilliant writer of the early days of this century, who was something of a super-salesman on

his own account, is credited with saying:

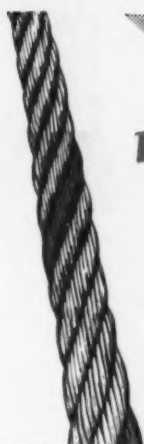
"The typical purchasing agent is a man past middle life, spare, wrinkled, bald, intelligent, passive, cold, non-committal; with eyes like a codfish, polite in contact, but at the same time unresponsive, cool, calm and damnably composed as a concrete post or plaster of paris cast; a human petrification with a heart of feldspar and without charm or the friendly germ; minus bowels, passions, or sense of humor. Happily they never reproduce, and all of them finally go to Hell."

President "Cork" Corcoran of NAPA comments that, whatever the accuracy of this description may have been in Elbert Hubbard's day, the concluding sentence was indubitably true. They couldn't have reproduced, for you can't find purchasing agents to fit that description today.

TRADITIONALLY, the existence of uniform prices in any given market has been construed as evidence that effective competition is absent, and gives the cue to raise charges of monopolistic practice. Professor Raymond Rodgers of New York University, vigorous proponent of the "dynamic competition" theory, takes exactly the opposite view. Speaking before a recent meeting of the American Marketing Association, he declared: "When identical prices appear as part of the moving patterns of price behavior, they give the clearest possible proof of keen competition."

ECONOMIC significance of purchasing was cited in evidence at an ICC hearing recently, anent the petition of the D&RGW Railroad to open the "Ogden gateway" for through traffic. Testifying for the Union Pacific in opposition to this proposal, UP's General Purchasing Agent, G. T. Wickstrom, estimated that diversion of business from his line would entail a reduction of \$6,889,328 per year in UP purchases.

THE Idaho State Purchasing Agent got a requisition the other day to order a NICE catalog. NICE is not an adjective. It stands for the Northern Idaho College of Education.



replacements  
*far* less frequent  
when you use

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**"HERCULES"**

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**WIRE ROPE**

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Its strength... its toughness... its unusual endurance - add up to longer wire rope life

These essential life factors are not a matter of chance. They are the result of combining "HERCULES" quality and PREFORMING. This is a winning combination as Preforming is the process that increases the life of a wire rope, by freeing it of internal stresses. It also makes a wire rope easier, quicker and safer to handle.

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The plan will help you set up a program of periodic and less frequent purchasing, simply by following a prescribed schedule which will be based on your thermocouple and chart needs.

Your "Honeywell Supplies Man" will be around to see you as soon as possible . . . to give you the full particulars and to make a survey of your continuing pyrometer supplies requirements. In case you want him in a hurry, call your local Honeywell branch office . . . or complete and mail the coupon to arrange for a discussion of the plan at your convenience!

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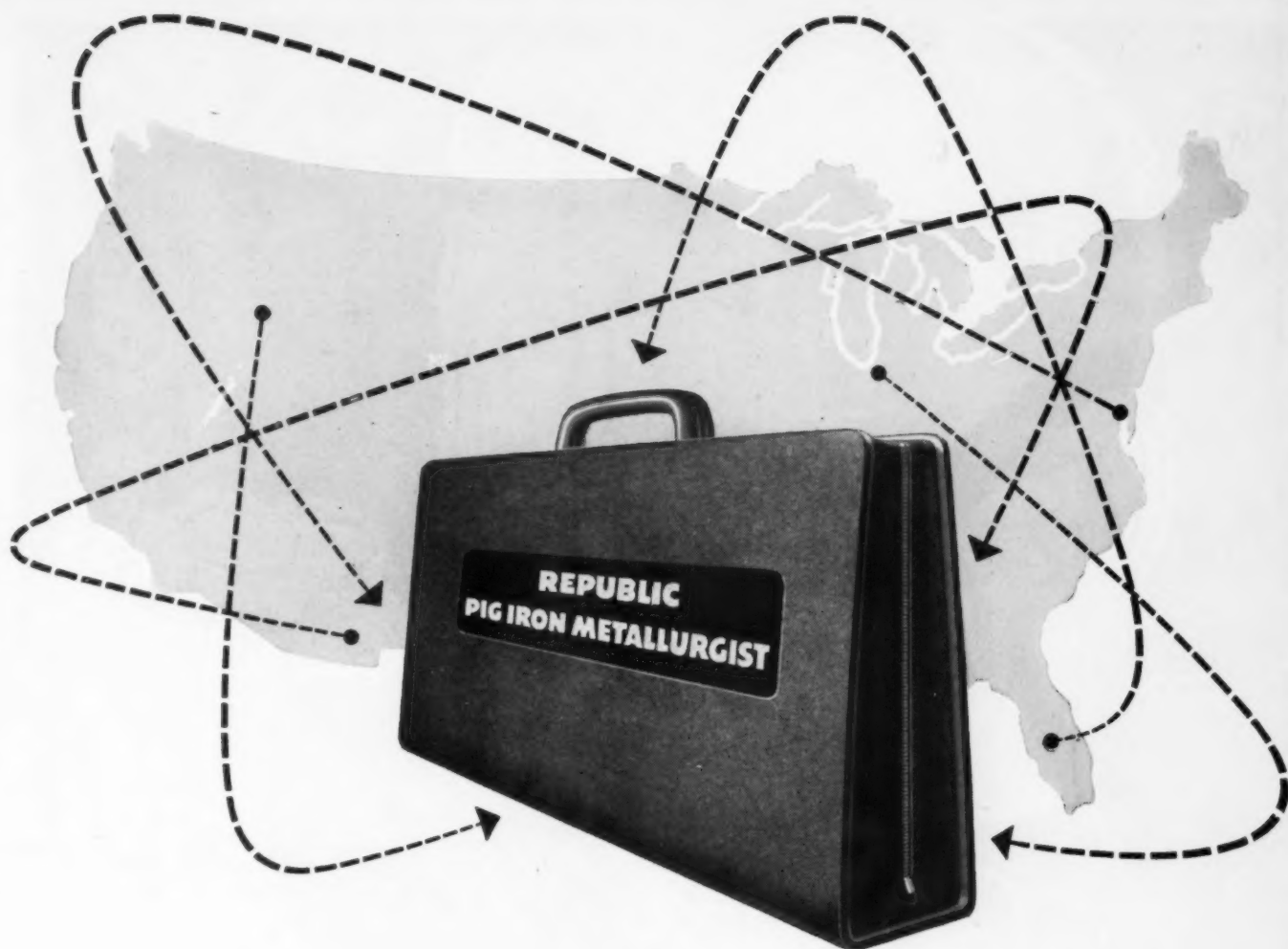
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## *This brief case really gets around!*

Truly a traveling brief case, is the one carried by a Republic Pig Iron Metallurgist. Equally at home in Mainliner cabin, Pullman berth or fast-moving car, it's often heading for trouble . . . foundry trouble that needs to be corrected.

Other times, it is on its way to forestall trouble . . . furnishing the answers to routine questions about molding practice . . . offering suggestions for improving castings or cutting production costs.

As countless foundrymen will testify, it never stays long enough to wear out its welcome, but its visit seldom is soon forgotten.

Perhaps you have some unanswered questions or unsolved problems which might be cleared up by a visit from a Republic Pig Iron Metallurgist. Just let us know when you would like him—and the brief case—to stop.

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# *Republic* **PIG IRON**

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Low-Phosphorus,  
Copper-Free

**"REPUBLIC"**  
(Northern)  
Foundry, Basic  
and Malleable

**"PIONEER"**  
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**ALSO TRUSCON FOUNDRY FLASKS • REPUBLIC CORE WIRE • FOUNDRY NAILS**



## NOW "TWIST OF THE WRIST" INTERCHANGING OF 7 CARTRIDGES AND FILTER WITH AO R2000 RESPIRATOR

Convert your respirator to one of eight dust and chemical types as needed! You can with the NEW R2000 thanks to a new retainer shell which accommodates 3 dust cartridges, 4 chemical cartridges and chemically-treated dust filter of the throw-away type. Your AO Safety Products Representative can supply you with this compact, adaptable and highly efficient "8 in 1" respirator.

### Quick Facts

- 1** Protects against:
  - Nuisance and pneumoconiosis-producing dusts
  - Toxic dusts
  - Combination of all dusts (by cartridge or filter)
  - Low concentrations of light organic gases
  - Low concentrations of acid gases
  - Low concentrations of combined acid and organic gases
  - Nuisance concentrations of ammonia.
- 2** Newly designed lightweight chemical cartridges of non-sparking aluminum have increased capacity, can withstand rough handling and moisture.
- 3** All dust cartridges have Bureau of Mines Approval.

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On thousands of applications, stepless variable speed operation assures exactly the right speed for every operation . . . for each operator . . . the right speeds for each change in the consistency or shape of the material being processed. Such variable speed operation pays off in higher rates of production, a better quality product and more efficient performance of your equipment and your operators.

**ALL-METAL** Master Speedrangers provide infinitely variable speed in an all-metal unit. This all-metal construction gives you greater compactness and durability than you can get from any other variable speed drive.

## variable speed operation doesn't cost

# IT PAYS

**SIMPLE COMPACT DESIGN** The design is extremely simple, consisting of a metal ring which operates at a variable position on the two driving and two driven cones. The position of the ring on the cones determines the speed of the output shaft.

**EXTREME FLEXIBILITY** Speedrangers can be supplied for single phase, polyphase, or direct current operation. They can be furnished also with integrally built gear reduction units and electric brakes . . . in enclosed, splash proof, fan-cooled or explosion proof construction and for a wide variety of mounting arrangements.

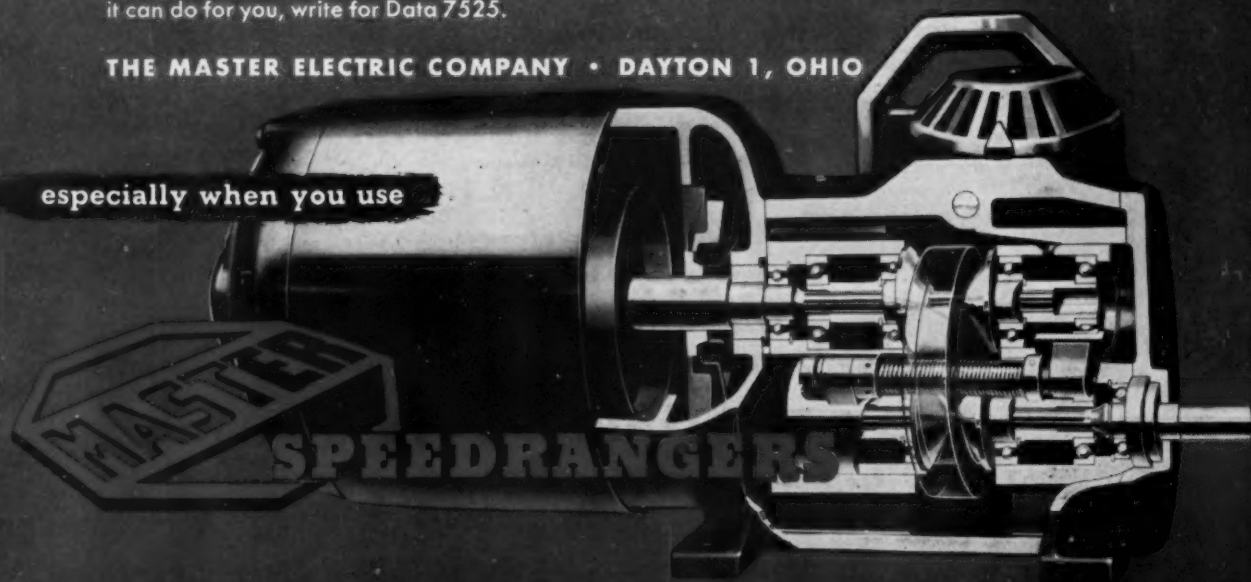
**HORSEPOWER** Available in sizes up to and including 5 horsepower.

**SPEED RANGES** Up to 9 to 1 are available. (Up to 15 to 1 in some sizes.)

For additional information on how the Speedranger works and what it can do for you, write for Data 7525.

**THE MASTER ELECTRIC COMPANY • DAYTON 1, OHIO**

especially when you use





# ALOYCO

introduces

a proven

## ACID SHIELD VALVE



No. 111-AS Gate Valve—same design as regular No. 111 with acid shield added. Size range ½"-10".

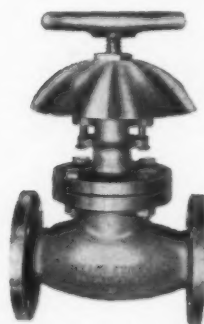
**Aloyco Acid Shields** are designed to meet rigid plant safety codes for the protection of personnel and minimize maintenance. They adequately protect the operator's face, hands and upper body from hazardous liquids and accomplish this without interfering with the effective operation and maintenance of the valves.

The Shield is spun from stainless steel sheet and is securely fastened to the yoke bushing. Being an integral part of the valve it does not need to be removed for inspection or renewal of packing. It does not rise with the stem, thereby affording the same degree of protection whether the valve is open or closed.

For additional safety and to further reduce maintenance, all valves ordered with Aloyco Acid Shields are supplied with stainless steel yoke bushings and nuts and Teflon stem packing as standard equipment. The initial cost of these features is nominal and many satisfied users report maintenance savings are substantial.



No. 110-AS Gate Valve—same design as regular No. 110 with addition of acid shield. Size range ½"-4".



No. 311-AS Globe Valve—same design as regular No. 311 with acid shield added. Size range ½"-6".

Send for further information.

Aloyco Acid Shield Valves are available in Aloyco 20, 18-8S, 18-8SMo, Monel, Nickel, and other alloys. Regularly equipped with Teflon-packing and stainless steel yoke bushings.

Aloyco Valves are manufactured in compliance with the new MSS Stainless Steel Valve Standards S.P.-42.

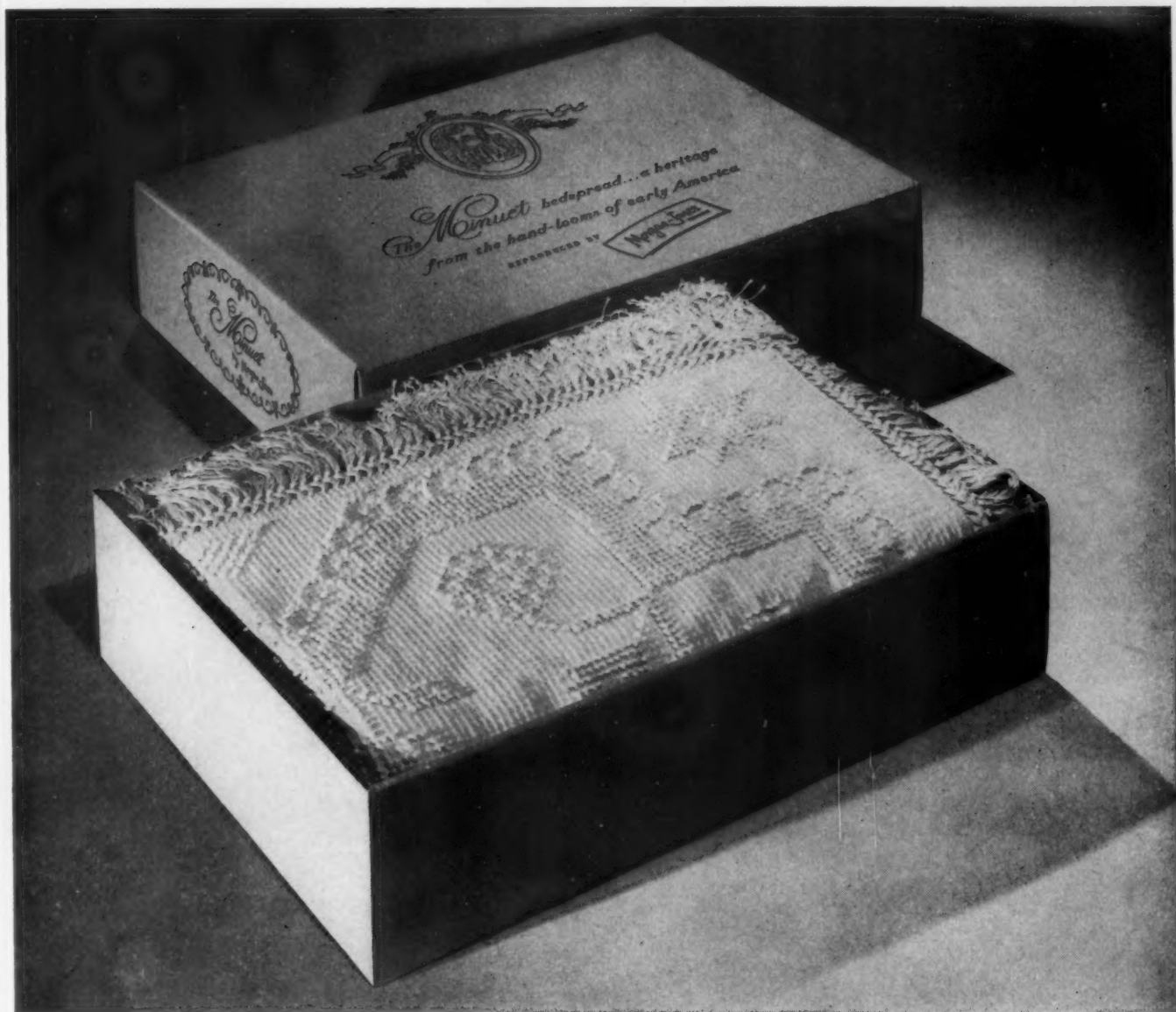
### ALLOY STEEL PRODUCTS CO., Inc.

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ATLANTA — CHICAGO — HOUSTON — LOS ANGELES — NEW YORK — PITTSBURGH — WILMINGTON

*Want Additional Product Information? See Page 19.*

# Creative Package Design



## this de luxe corrugated prepak\*

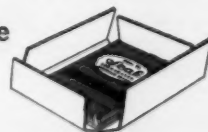
Delivers goods to user factory-packed ... conveys the impression of a quality product ... is outstanding in display ... is attractively printed in light brown ink on blue embossed board ... identifies, describes, sells the product ... features the maker's name ... insures against damage ... saves one-third in packaging costs. Apply package action to your product and increase sales. Consult Hinde & Dauch, Executive Offices, 5007 Decatur St., Sandusky, Ohio.

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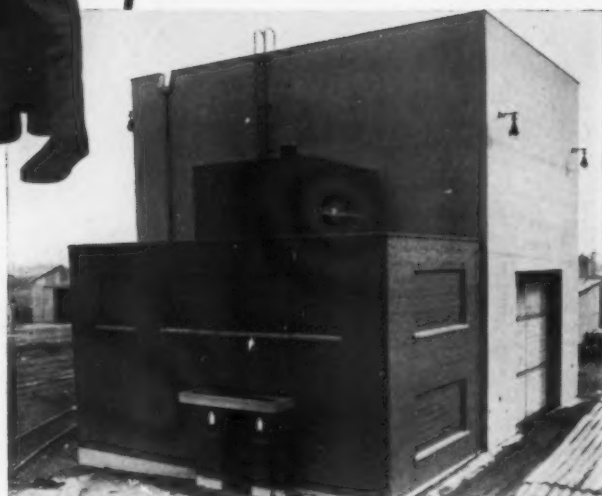
\*Reg. U.S. Pat. Off.



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*You*  
CAN  
TRUST**

Million-volt X-ray probes the innermost recesses of Continental Castings to assure sound structure.



The new X-ray building at Continental's E. Chicago Works will handle the largest casting.

How perfect must your castings be? That's how perfect Continental can deliver them. The most advanced scientific methods of quality control are yours at Continental as typified by this complete building devoted

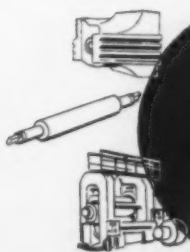
to X-ray inspection.

Because proved quality is always a consideration in selecting your casting supply source—make the time and money-saving decision to *switch to Continental NOW!*

**Carbon and Alloy Steel  
Castings from  
20 to 250,000 pounds**

**Complete Rolling Mills and  
Auxiliary Equipment**

**Iron, Alloy Iron and Steel  
Rolls for all industries**



**Continental**

**FOUNDRY & MACHINE CO.**  
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Plants at: E. Chicago, Ind. • Wheeling, W. Va. • Pittsburgh, Pa.



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**MAKES**  
more than  
**1500**  
regular cataloged  
items of steel  
equipment . . .

**WILL MAKE**  
special contract  
items to your  
specifications

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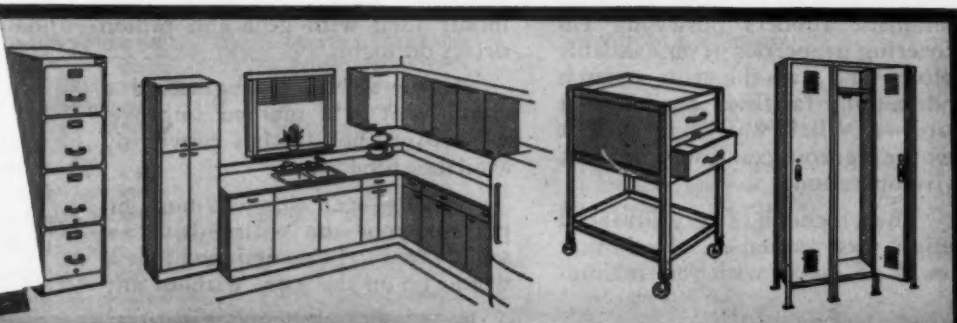
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Factories: AURORA, ILL., YORK, PA., CHICAGO HEIGHTS, ILL.

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- Flat Drawer Files
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- Desks
- Stools
- Tool Boxes
- Sorting Files
- Revolving Bins



# Achieves the long-sought V-BELT DRIVE for LOOMS

## For Cotton Mills and Rayon Mills

Loom operators had long wanted a V-Belt Drive for their looms. But—

## Stubborn Difficulties

—stood in the way. Gates over-came these difficulties through SPECIALIZED research in the world's largest V-Belt testing laboratories, thus providing—

## Another Accomplishment For Industry

by Gates SPECIALIZED Research

**T**HE extremely small diameter of pulleys over which loom drive V-Belts must flex under severe shock-loads posed a problem in V-Belt construction that seemed *insurmountable*.

But, with war-born synthetic fibers of unusual strength; and with man-made rubbers possessing engineering properties never available before—and with the great research and testing facilities available at Gates—a V-Belt was achieved that met the rigorous conditions of loom drive operation.

Then, a clutch of very advanced design was wanted—a clutch that would do *more*, with *less* mainte-

nance, and *fewer* troublesome adjustments than the clutches commonly used with gear and pinion drives on looms.

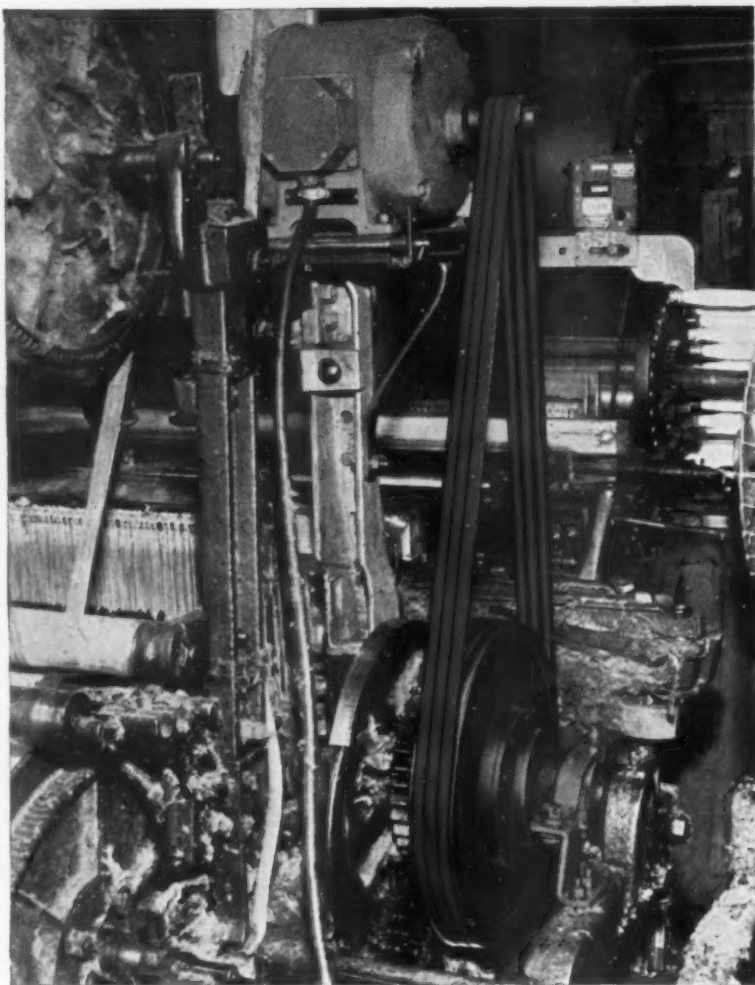
Gates therefore engineered a clutch that is a marked improvement over the clutches previously available for looms.

Finally—and this was most important, too—the entire drive assembly had to be so designed that it would go on the loom without any

costly re-arrangement of existing mill equipment. This rather demanding job of design was also accomplished.

Today, the Gates V-Belt Drive for looms is cutting operating costs—and giving bigger loom output with better quality of cloth—in Cotton Mills and Rayon Mills the country over—another accomplishment of Gates SPECIALIZED Research!

ENG-505



**THE GATES RUBBER COMPANY**  
*The World's Largest Makers of V-Belts*  
DENVER, U.S.A.

**GATES VULCO ROPE DRIVES**  
Engineering Offices and Jobber Stocks **IN ALL INDUSTRIAL CENTERS** of the U. S. and 71 Foreign Countries

# Save when replacing Type 172 thyratrons!



1.

BUY FG-105's;  
their price is lower,  
while ratings are  
equivalent.

2.

USE economical  
General Electric  
adapters.

3.

TOTAL up your  
replacement cost ...  
you'll find  
it's less!

THE pair of FG-105's shown here on a welder-control panel, replaced two 172 metal thyratrons. Including G-E-adapter cost, net saving to owner was just under \$20. Tube performance remains the same. Tube life will be equally long.

Here's an economy step you readily can take, along with thousands of other users of motor-control and welder-control apparatus. See your G-E tube distributor for the details! He has FG-105's in stock. He has G-E adapter kits. In line with General Electric policy, he's anxious to help you get maximum tube dollar-value.

All 172's on a panel need not be replaced. A

combination of 172's and FG-105's will give satisfactory performance. Design of the G-E adapter makes for a neat, permanent installation, with the adapter mounted solidly on the studs that held the 172, so becoming a part of the equipment.

For all tubes—thyratrons, ignitrons, rectifier types, others—your local G-E tube distributor is best equipped to meet your needs. Your General Electric electronics office gladly will cooperate in putting you in touch with this fast, responsible supply source. Or write *Electronics Department, General Electric Company, Schenectady 5, New York.*

## G-E electronics offices are located in the following cities:

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**BOSTON 1, MASSACHUSETTS**  
140 Federal Street  
**CHICAGO 54, ILLINOIS**  
Merchandise Mart Plaza  
**CINCINNATI 2, OHIO**  
215 West Third Street  
**CLEVELAND 14, OHIO**  
710 Williamson Building  
Euclid Ave. and Public Square  
**DALLAS 2, TEXAS**  
Norman Bldg., Ross and Lamar Sts.

**DENVER 2, COLORADO**  
650 Seventeenth Street  
**DETROIT 26, MICHIGAN**  
3037 Book Tower  
**HOUSTON 2, TEXAS**  
812 Electric Building  
**KANSAS CITY 6, MISSOURI**  
106 West 14th Street  
**LOS ANGELES 14, CALIFORNIA**  
Suite 1300-1301  
Security Title Ins. Bldg.  
530 West 6th Street  
**WASHINGTON 5, D. C.**—806 Fifteenth Street, N. W.

**MINNEAPOLIS 2, MINNESOTA**  
12 South 6th Street  
**NEW YORK 22, N. Y.**  
570 Lexington Avenue  
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1405 Locust Street  
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# GENERAL ELECTRIC

180-JAB



# Buried Treasure

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**More than likely...  
if you can dig up  
New Ways to  
make it do more  
for your customers  
...by COUNTING**



No. 1239 Predetermining Counter signals operator or actuates mechanism to stop machine at end of pre-set run.

Dig deeply into this million-dollar question: "How could *my* product increase its usefulness and sales . . . by counting?" And you may well uncover a new and distinctive merchandising appeal that will set your product apart from competition . . . as so many manufacturers have done.

It's as simple as this: If your product

is mechanically or electrically operated, then it's definitely worth a search to see if there's hidden sales-treasure buried there. This can be quickly determined by some fast spade-work done by a Veeder-Root engineer, paired off with your design engineer. And the digging can get under way . . . *any time you say.*



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# Veeder-Root

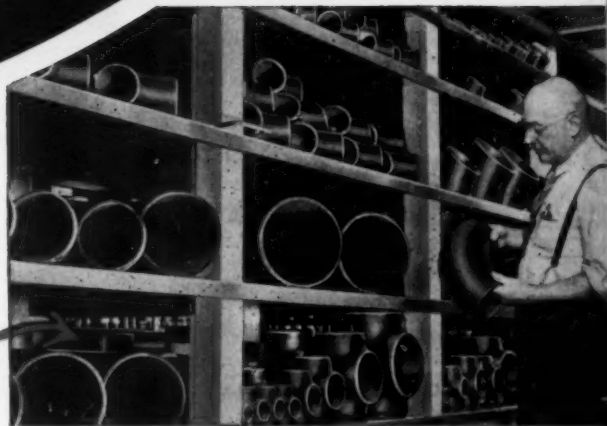
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Welding Fitting as shown  
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the right mark for  
every need in  
welding fittings  
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**KNOCK 'EM DOWN** is the way wreckers do it today... with a hefty iron ball swung by the boom of a crane. Many big cranes, bulldozers, trucks and other huskies used for demolition and construction depend on powerful Exide Batteries to crank their Diesel engines.



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Exide Batteries serve you night and day wherever you are. Practically every type of product is handled by Exide-powered battery electric trucks. Coal used by industry, railroads and in homes is moved underground by mine locomotives,

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radio and television broadcast, in aircraft, on ocean vessels. And on millions of cars, trucks and buses, they daily prove that "When it's an Exide, you start."

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**Exide\*** BATTERIES HAVE PROVED THEIR DEPENDABILITY IN VITAL SERVICES FOR 62 YEARS. \*Reg. Trade-mark U.S. Pat. Off.



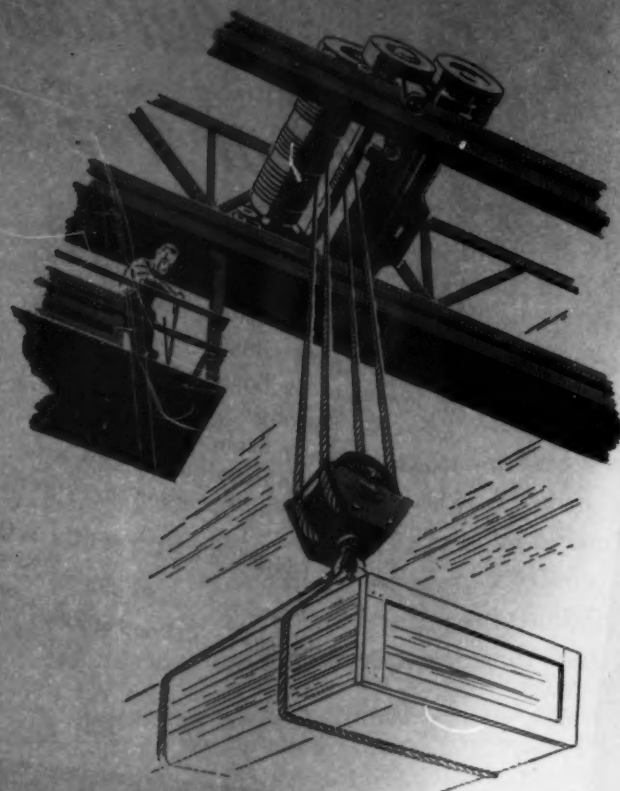
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**B**UILDING appliances was an old story to a well-known manufacturer but he knew the reputation of the automotive industry for getting quality products at low cost. He figured that any firm with the know-how to serve the car-making industry might be able to show him ways to improve quality and save money doing it. So when a rather

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Die Casting Division

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die castings  
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Proper tire maintenance alone can cut costs up to 20%.

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**Here's why BFG can be impartial—**No other company offers the wide range of types or sizes of tires and tread compounds as B. F. Goodrich. Your BFG man has no axe to grind, his company "makes 'em all" . . . his advice is impartial!

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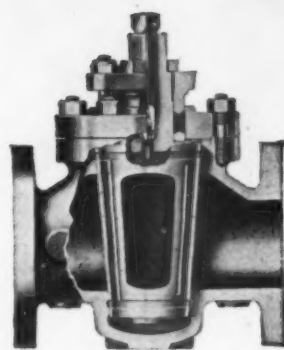
City \_\_\_\_\_

State \_\_\_\_\_

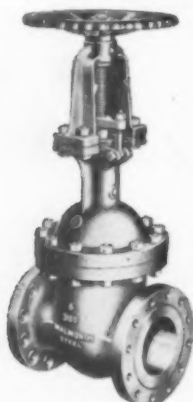


## ● VALVES

## ● PIPE FITTINGS



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Walworth  
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Walworth manufactures a *complete line* of valves and pipe fittings: all made to the highest standards of quality, both as to dimensional accuracy and metallurgical properties. In design, construction, and performance, Walworth products reflect more than a century of experience in the manufacture of quality valves and fittings.

Your Walworth distributor will give you full information on the *complete line* of Walworth steel, iron, and bronze, and special alloy valves and pipe fittings; also Walworth Lubricated Plug Valves, and Walseal\* valves, fittings and flanges. Ask for this information today.

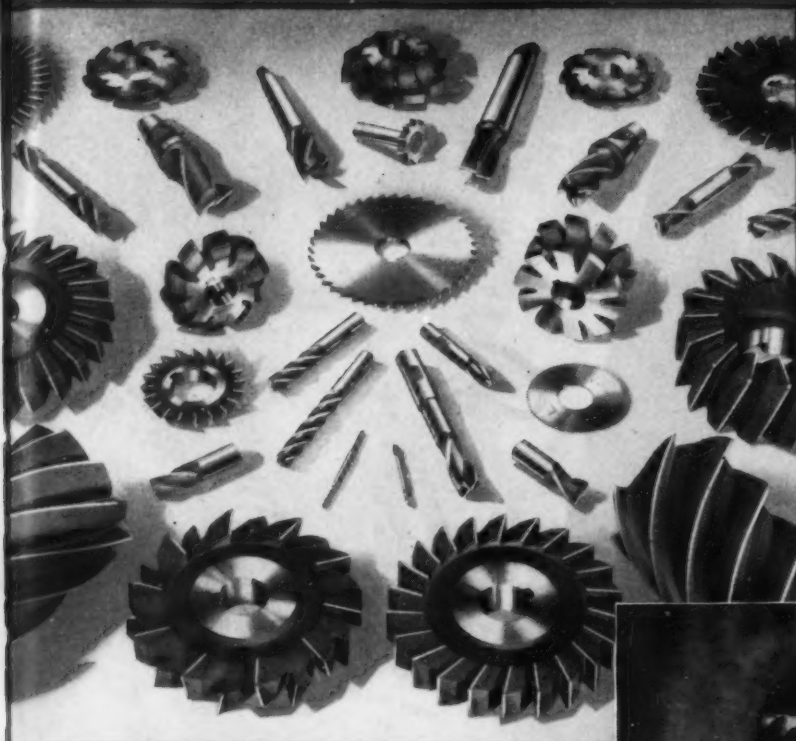
\*Patented—Reg. U. S. Pat. Off.

# WALWORTH

## valves and fittings

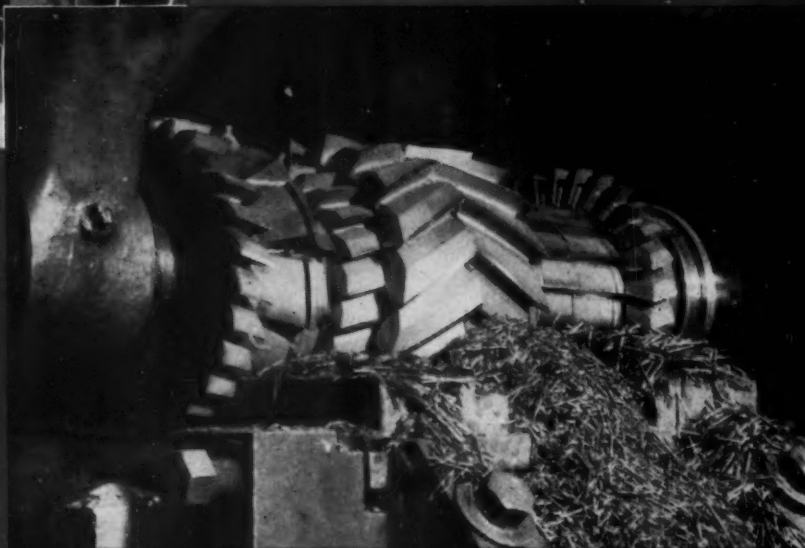
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Ask for Brown & Sharpe cutters at your industrial supply distributor's. Or write for catalog. Brown & Sharpe Mfg. Co., Providence 1, R. I., U.S.A.

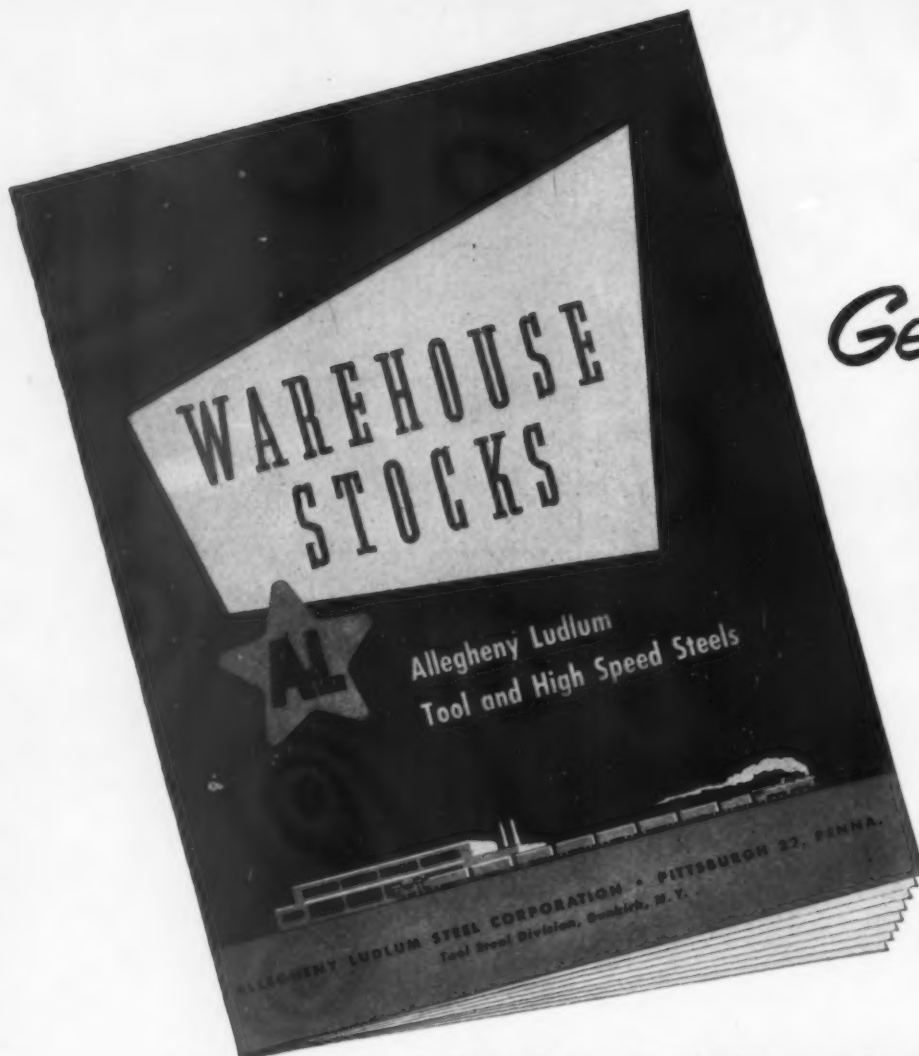
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This 72-page catalog lists the stocks of A-L High Speed and Tool Steels which are constantly maintained in each of 18 warehouses, located at convenient points from coast to coast. In compact, easy-to-follow style, the book gives a complete stock picture, nationwide, of the 15 most widely used types of these steels—each in a full range of standard shapes and sizes—and also includes data on stocks of drill rod, tool bits and Carmet carbide metal blanks and tools.

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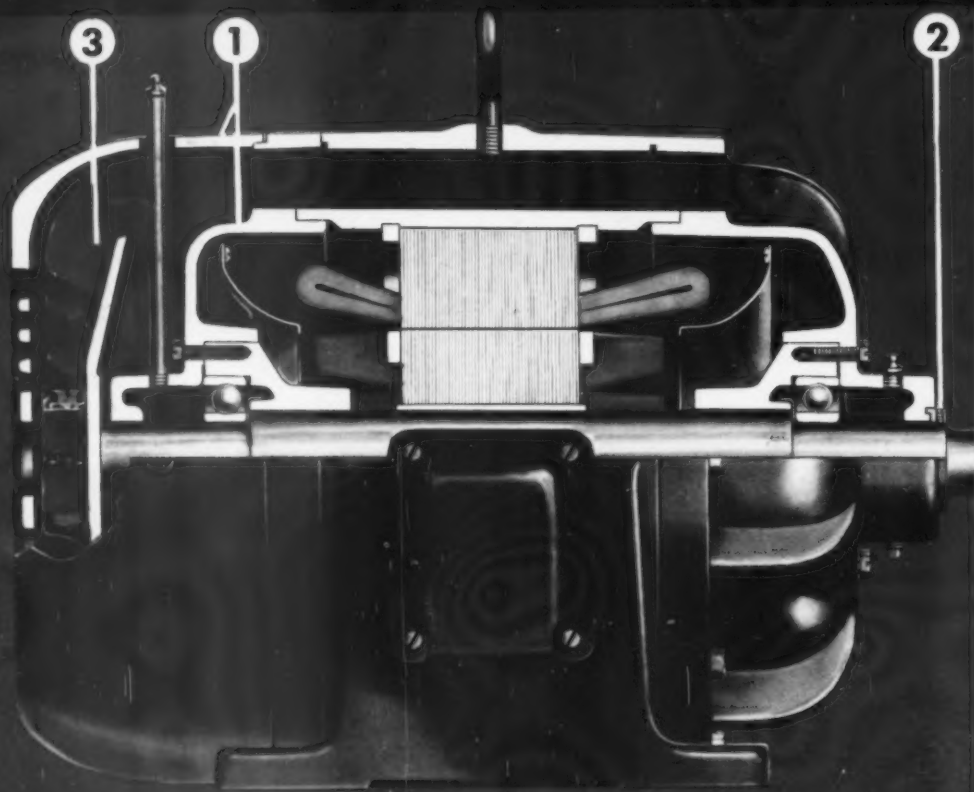


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Here's the totally enclosed Tri-Clad double-shell structure (1) that locks out dirt, flying metal chips, abrasive dust and corrosive fumes. Check the rotating labyrinth seal (2) which prevents foreign matter from working in along the shaft. Note the cast-iron housing, the corrosion-resistant G-E Textolite\* material cooling fan (3). Fan circulates cooling air between the shells—no contaminated air touches the punchings or inside parts.

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Acid fumes, alkali dust, dye-house vapors, tropical weather — you name *your* motor "poison." You just can't beat Tri-Clad cast-iron construction for corrosion resistance.

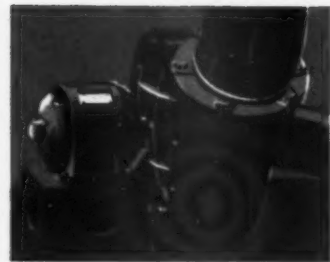
Rolling up 6 billion hours of service on all kinds of jobs, more than 1,876,000 Tri-Clad motors tell the eye-opening story of cast-iron motor structure. You get an inherent damping action that minimizes noise and damaging vibration. You get rigidity that makes for permanent shaft alignment. (Try bolting a Tri-Clad motor to an uneven surface — the bolt will snap before you can twist the rigid frame out of line.) You get extra protection against jarring blows and rough handling. You get resistance to rust and corrosion that is not approached by any other metal used for standard motor construction today.

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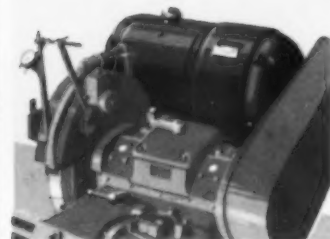
\*Reg. U. S. Pat. Off.  
(standard on popular sizes)

**GENERAL  ELECTRIC**

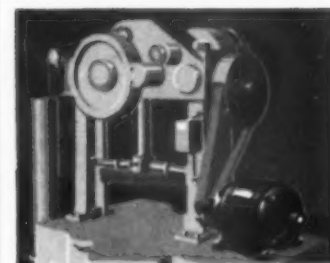
## YOU CAN'T BEAT **TRI/CLAD** REG. U.S. PAT. OFF. **EXTRA PROTECTION**



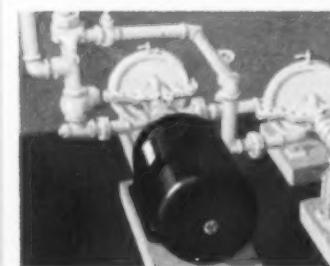
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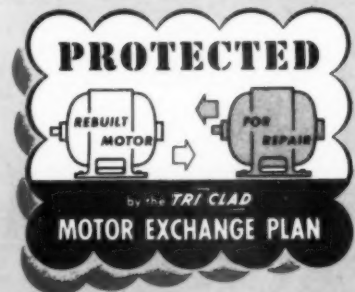
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25 Ounce Mistorizer

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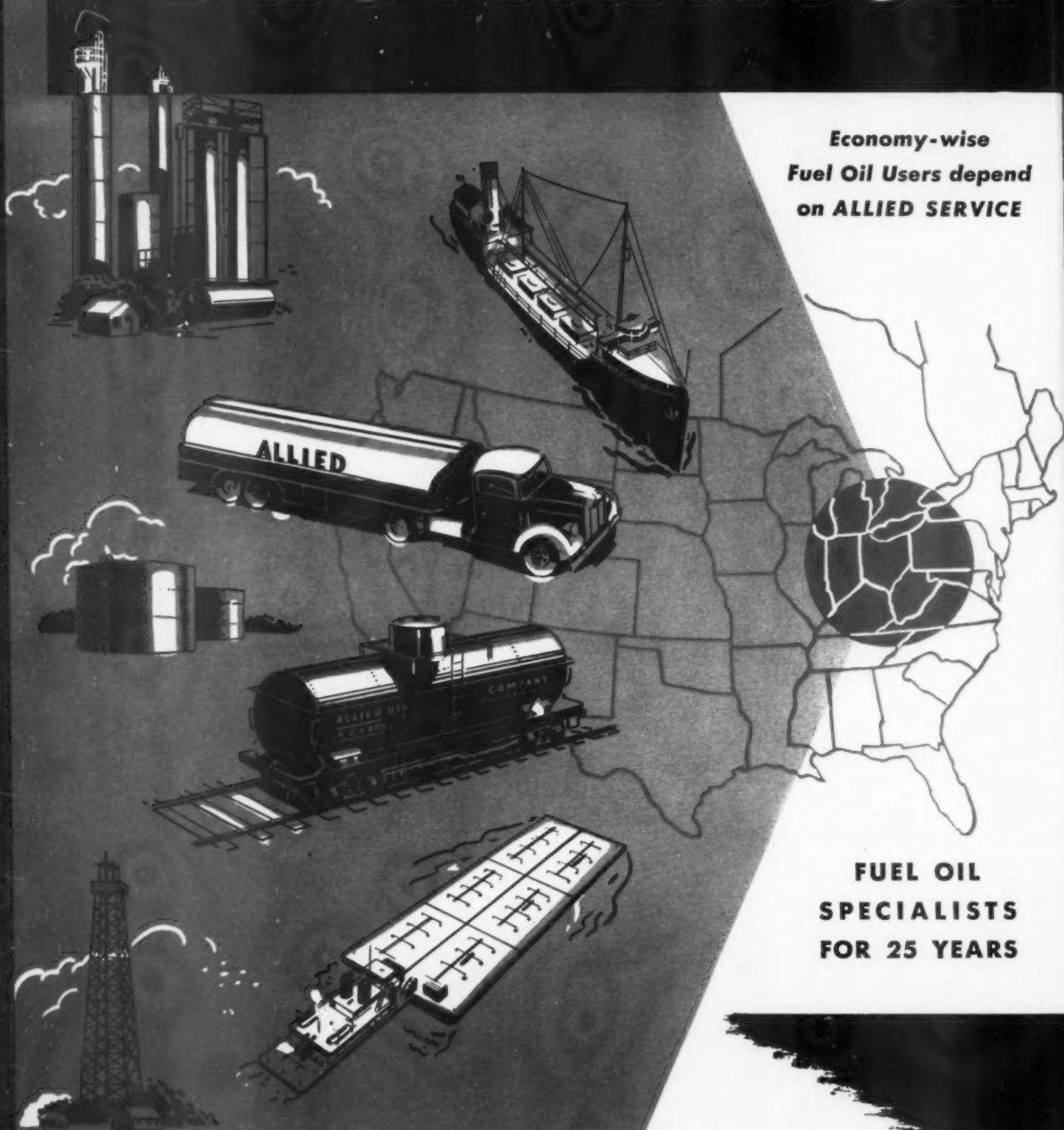
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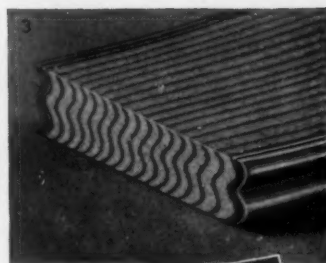
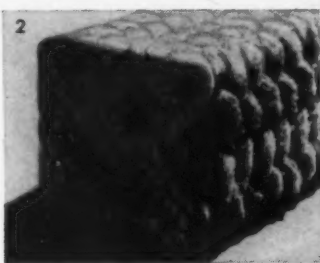
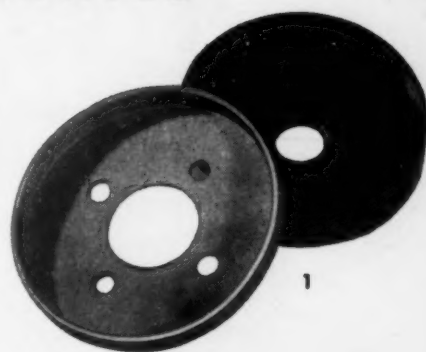
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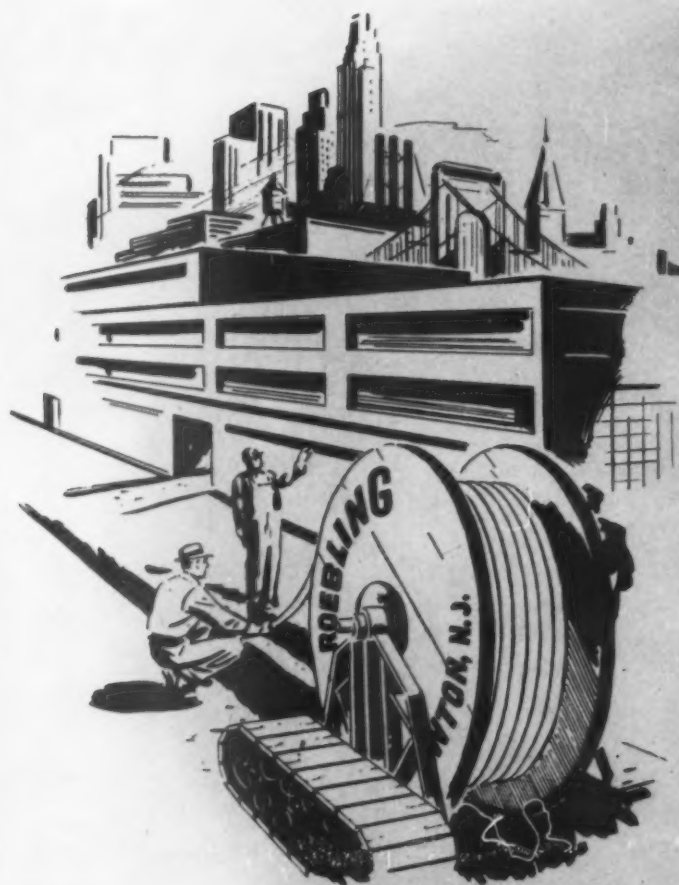


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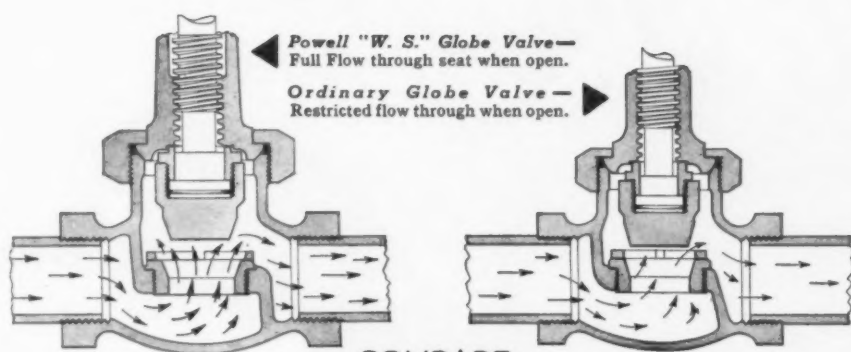
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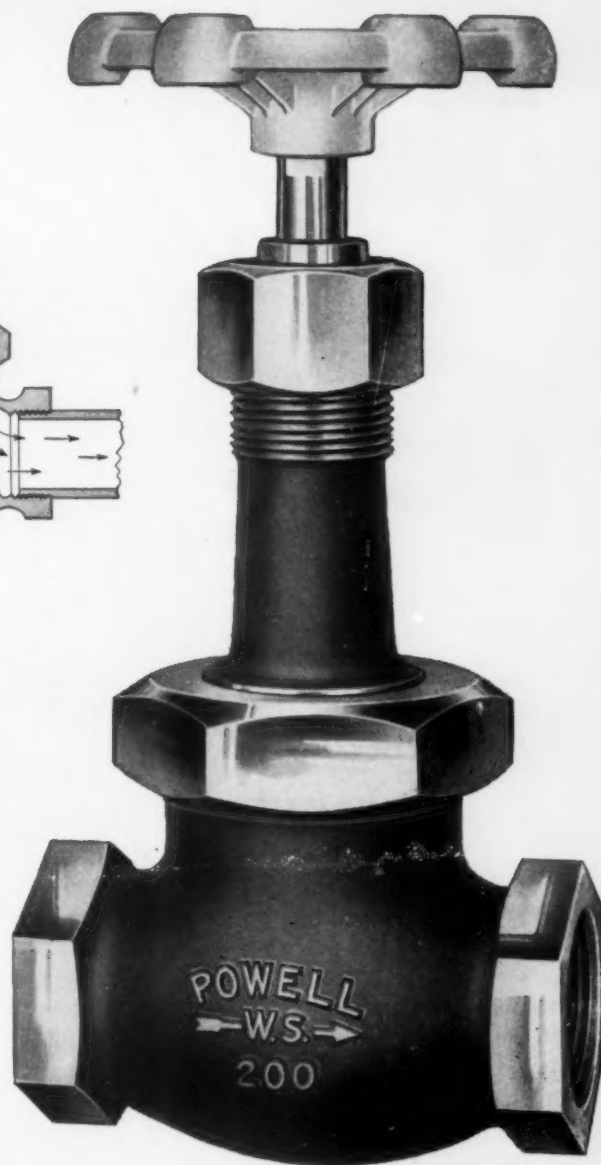


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Want Additional Product Information? See Page 19.

61

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The National Magazine of Industrial Procurement

VOL. 29, No. 1

JULY, 1950

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JULY, 1950

Have Purchasing Agents Been Over-Cautious? .....	67
Our Ally—the Salesman .....	W. N. McPhee 71
Who Contacts Your Suppliers? .....	C. E. Colvin, Jr. 72
Formulas Take Hunches Out of Purchasing .....	Tyler Hicks 74
PURCHASING Reports on Purchasing Opinion	
Have We Found the Formula for Industrial Stability? .....	77
What Price Smog Control? .....	Keenan Goodman 79
Quality Report Aids Purchasing Agent .....	O. J. Craig 82
Contract Renegotiation .....	A. N. Weckslar 84
Where We Stand	
Commodity and Business Trends .....	87
Unscramble Your Job .....	D. A. Laird 95
How California Selected a New State Purchasing Agent ..	G. W. Alijian 97
We Have a New Neighbor .....	98
The Why and How of Central Stores .....	C. W. Hayes 99
New Look in Purchase Orders .....	102
Salesmen Are the Buyer's Best Friend .....	C. H. Lang 103
The Purchasing Function in Management Organization ..	W. R. Spriegel 105
Small Business' Share of the Military Procurement Dollar	
E. E. Oppenheim	107
Trade Marks, Trade Names, and Unfair Competition ....	Leo T. Parker 112
How Long Do You Keep Your Records? .....	153

## MONTHLY FEATURES

Purchasing Previews .....	13
Late Trade Bulletins and Catalogs .....	19
F. O. B. ....	30
Highlights .....	69
New Products — Ideas .....	120
Office Equipment and Supplies .....	149
Among the Associations .....	162
Personalities in the News .....	198
Buyer's & Seller's Mart .....	227
Index to Advertisers .....	228

65

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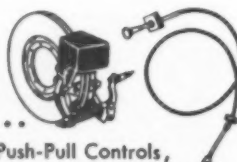
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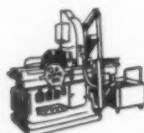
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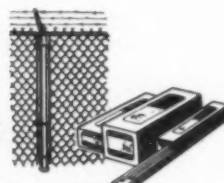
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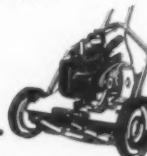
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# Have Purchasing Agents Been Over-cautious?

**T**HE upturn in business activity and commodity prices during the second quarter has prompted some business commentators to make disparaging references to the consistently conservative policy of purchasing agents throughout the current business cycle. They point to the \$4.7 billion that was worked out of manufacturers' inventories in 1949, and to the longer coverage indicated in today's buying programs, with knowing remarks about higher replacement costs and opportunities missed. Even as second-guessing, that sort of reasoning and inference shows a fundamental lack of understanding as to the functions of industrial inventories and the principles of a sound inventory policy.

Manufacturers' inventories of raw materials and parts represent an investment of working capital to support the production program. The criteria by which the soundness of that investment must be judged are based upon its ratios to current operating schedules and requirements, providing adequate supplies to carry out those schedules, at recoverable values in terms of manufactured product, and avoiding excessive carrying costs and the risk of speculative loss. Inventory policies must be flexible, capable of change with changing business and economic conditions. Over the long period, good inventory practice maintains the stock reservoir at such levels that current purchases are closely comparable with current requirements.

The inventory liquidation of 1949 was a corrective measure taken at a time when declining business volume had thrown the inventory position out of balance, with oversupply in relation to current needs. It left business in a much healthier position at the close of the year. To a considerable extent it was responsible for the increase in working capital needed to meet this year's expanding programs. It removed one of the very important factors of oversupply that hung heavy over the entire business community, with suppliers and consumers all along the line equally vulnerable and equally reluctant to initiate the potential advance.

That policy of "cautious optimism" has fully justified itself in the more recent upturn. The currently extended coverage is a reflection of increased demand and expanding operations. It represents "inventory buying" only to the extent of maintaining sound working ratios in respect to volume of operations and the conditions of supply. The temptation to jump on the bandwagon is greater now than at any time in the present cycle, and in that temptation lie the seeds of inflation instead of sound values. If and when inventory policy is predicated on speculative inventory profits, the danger signals will again be flying.

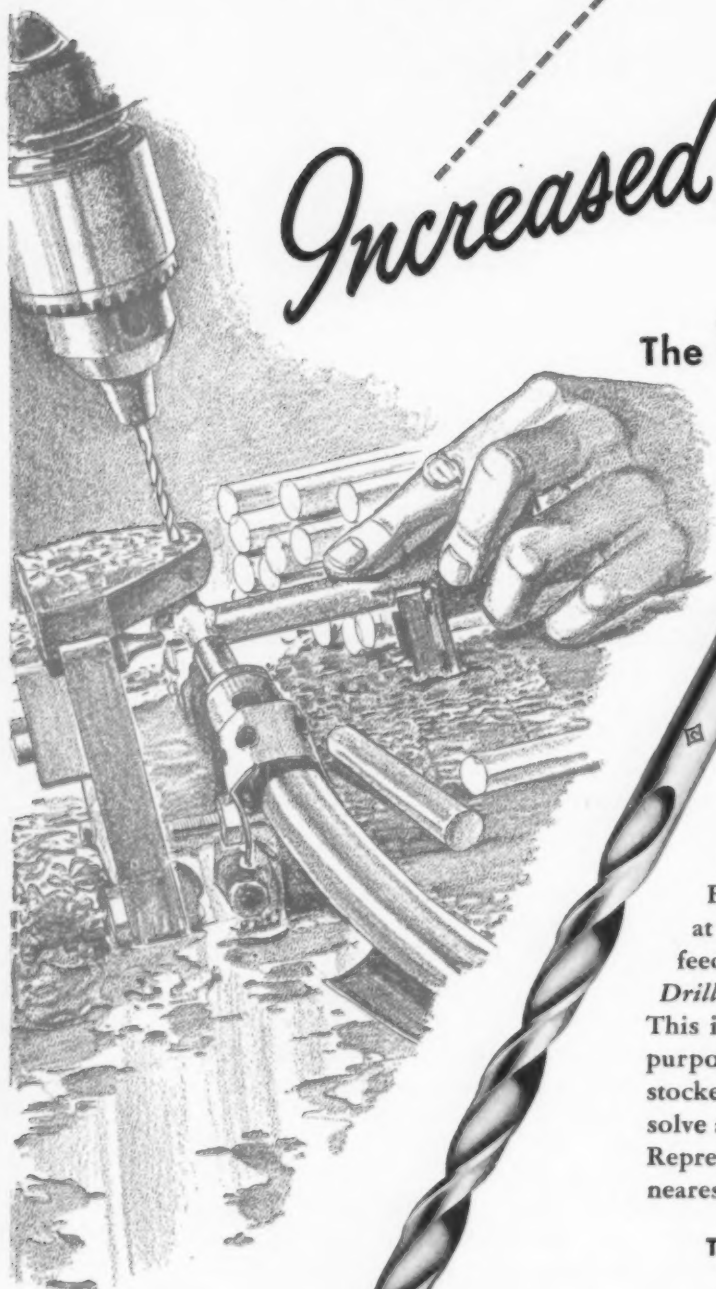
Industry exists to make profits through production—not paper profits through inventory appreciation. The record shows that it is doing very well indeed by adhering to that principle.

*Stuart F. Henrity*

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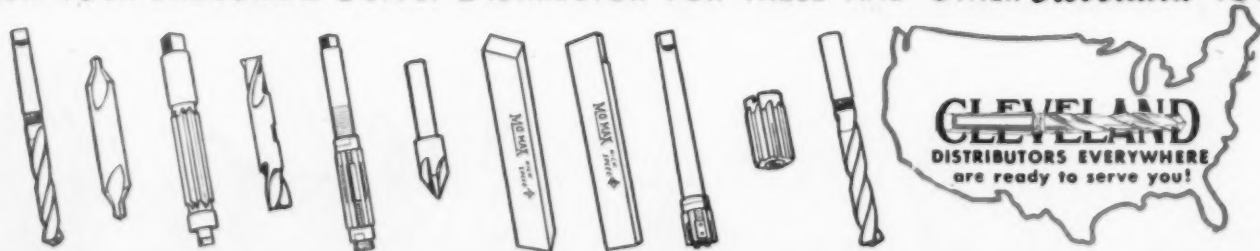
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# Highlights

This issue's important features summarized for the busy reader



In progressive state and municipal governments throughout the nation, there is a new appreciation of the importance of getting the right sort of purchasing officer, and industrial purchasing men are being asked to help in this selection. On page 97 is a report on such a project, giving the details on how practical purchasing know-how was effectively applied to public service in the selection of a new **State Purchasing Agent** for California. It is an interesting and constructive story in itself, and will be specially helpful to those who may be called on for a similar service in their respective communities.

The wartime policy of **Contract Renegotiation** has again been called into use in connection with the vast procurement program of the armed services. Our Washington editor summarizes the current regulations on page 84. Turn to this article for information on what contracts are subject to renegotiation, what to do if your company's orders come within the scope of the legislation, and how to establish your position if the statute is not applicable in your case.

One of the questions frequently raised regarding this program is the extent to which **Small Business** may participate in government business. The article on page 107, by one who is close to Navy contracts, shows that small business is actually enjoying a very substantial share of such business.

The rainmakers of New York City's water supply system have focused attention on the fact that modern science is actually "doing something" about the weather and other climatic problems. One phase of this new approach to an ancient problem is the progress that has been made toward **Smog Control** in industrial areas. Turn to page 79 for a practical non-technical report on the devices that have been developed for this purpose and their application to industrial smog hazards.



**Purchasing Formulas** will never supplant good judgment and sound experience in industrial procurement, and it is not likely that purchasing will ever become a mechanical, automatic procedure. However, the judicious use of formulas in purchasing offers a twofold advantage to the buyer in giving assurance that his decisions have not overlooked essential objective factors, and in eliminating repetitive calculations. Turn to the article on page 74.

This month's **Guest Editorial** (page 71) is contributed by Walter N. McPhee of Vancouver, who has served for the past year as NAPA Vice President for District 1. Mr. McPhee discusses the purchasing-sales relationship, stressing the point that well informed and cooperative salesmen may be the most effective asset of the buyer in carrying out his responsibilities.

Scientific **Quality Control** by frequency distribution is winning increasing recognition as a valuable tool in production operations. It has equally far-reaching benefits as a valuable purchasing tool for the buyer who knows what to look for and how to interpret its findings. The article on page 82, with illustrations of representative quality reports and what they mean, will help you in evaluating product deliveries and the suppliers handling your orders.

An age-old problem in almost every purchasing operation is the extent to which **Contacts with Suppliers** can be strictly channeled through the purchasing department to provide adequate control and to discourage back-door selling and buying tactics. The article on page 72, by a practical and successful purchasing executive, tells how this situation can be met by applying the rule of reason and common sense, without surrendering any proper purchasing authority and resulting generally in better buying and greater satisfaction to everyone concerned in the transaction.



Does your purchasing department **Control Stores** and issue of purchased materials? A grass-roots discussion of central stores organization and operation appears on page 99. This is one of the valuable papers from the recent convention of the National Association of Educational Buyers, having direct application to industrial purchasing procedure as well.

Also from this convention comes the article on page 105, on purchasing as a **Service Function**, as seen by an expert in the field of industrial management organization. It is worthy of your close attention.

Are you making full use of these monthly departmental features compiled especially to keep you informed on recent industrial developments? A selected list of new **Trade Bulletins and Catalogs** that are yours for the asking (page 19) and the illustrated summary of **New Products and Ideas** (page 120) will help you keep abreast of industrial progress.



## Let's Go Fishing

Big bass flashing through your fancy lately? Been hankering for cool pine groves . . . or the feel of rolling fairways underfoot?

Yes, it's vacation time again! And if you're planning a holiday, here's a suggestion that may help to keep things running smoothly while you're away.

Call Ryerson now for quick delivery of the steels likely to be needed before you return. And tell the men who carry on to get in touch with Ryerson for whatever steel they need.

You can depend on us to work closely with you and your men—to give prompt, personal

attention to every requirement. So take a breather—forget the shop—and enjoy your vacation to the full.

### PRINCIPAL PRODUCTS

**CARBON STEEL BARS**—Hot rolled & cold finished

**STRUCTURALS**—Channels, angles, beams, etc.

**PLATES**—Many types including Inland 4-Way Safety Plate

**SHEETS**—Hot and cold rolled, many types & coatings

**TUBING**—Seamless & welded, mechanical & boiler tubes

**ALLOYS**—Hot rolled, cold finished, heat treated

**STAINLESS**—Allegheny bars, plates, sheets, tubes, etc.

**REINFORCING**—Bars & Accessories, spirals, wire mesh

**BABBITT**—Glyco bearing metal, also Ryertex plastic bearings

**MACHINERY & TOOLS**—For metal fabrication

# RYERSON STEEL

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK • BOSTON • PHILADELPHIA • CINCINNATI • CLEVELAND  
DETROIT • PITTSBURGH • BUFFALO • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO

# OUR ALLY— The Salesman

By **Walter N. McPhee**

**T**HIRTY years in purchasing leads one to the conclusion that the most valuable business contact a purchasing agent can have is a reliable informant—be he salesman, manufacturer's agent, or broker. He must be one who not only knows his business and has some knowledge of your requirements, but one who is constantly abreast of the market, prices, the supply situation, and the suitability of the merchandise he has to offer for your particular needs.

Buyers for distributors, where commodities run into the thousands numerically and originate in all parts of the globe, must depend on some source or sources of information which can be relied upon to provide him with such information, with reasonable timeliness.

Markets can and do change overnight. There is no known device or stabilizer which can guarantee, for any determined length of time, an even tenor in market ways. There are some who would turn to cartels of governmental control, but both of these can become a menace to the free trading system of democracy. Government controls may be dictated by circumstances, such as wartime emergency, to achieve a definite purpose, and as such they may be temporarily justified; however, the danger lies in a continuance of the restriction after the need for it has disappeared.



Walter Norval McPhee, Manager of Purchases for Kelly, Douglas & Co., Ltd., Vancouver, B. C., combines the keen business heritage of the New England Yankee and the Scotsman. He was born of Scotch parents in Barre, Ver-

Although it is usually wise to check and double-check our information, experience teaches that with reasonable cooperation salesmen can be the mediums through which such necessary information can best be obtained. It is therefore of paramount importance in purchasing to develop good relationships with all salesmen.

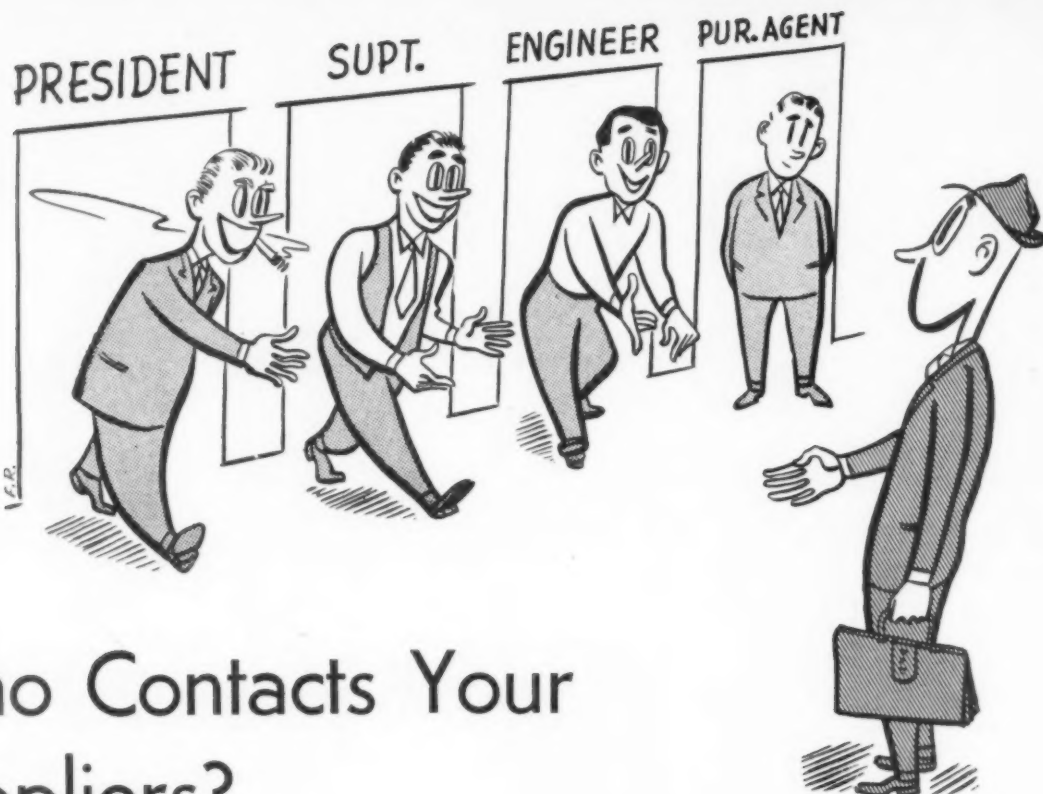
It is an axiom of business, well established and universally recognized, that every successful trans-

action must result in satisfaction to both the seller and the buyer. For the former, the sale should be one of which he can be proud. For the latter, the purchase should represent best quality at lowest cost, on fair and suitable terms. By such transactions and such satisfaction are forged links in the chain of a lasting business relationship that binds our economy into a union of mutual profit and good will—one harmonious and cooperating whole.

mont, in 1889, received his early schooling in that city and subsequently in Columbia, Tenn., and Philadelphia. Upon the death of his mother, the family returned to Scotland, and he continued his studies in Glasgow and Edinburgh. At the age of 14, he entered the wholesale grocery business as an apprentice, at Leith, and acquired a thorough training in all branches of the business with which he has been continuously associated ever since. In 1912, he emigrated to Canada, went all the way to the West Coast, and found employment with the Kelly Douglas organization. He has been with that company since that time, with a 3½-year interlude during which he served as an officer of the Canadian Expeditionary Force in World War I, being wounded twice in overseas action. Demobilized in September, 1919, he was assigned to the purchasing department, and was made Manager of the Purchasing Department in 1939.

He joined the Purchasing Agents Association of British Columbia in 1932, served as its President in 1943-1944 and as National Director the following year. Elected to the executive Committee of the Purchasing Agents in 1949 as Vice President for District No. 1, he has the distinction of being the first Canadian to represent the Pacific Coast associations in the National councils.





## Who Contacts Your Suppliers?

● By Charles E. Colvin, Jr.

Manager of Purchases  
Ethyl Corporation, Baton Rouge, Louisiana

THE other day a member of our plant management staff sat down beside me at lunch in the cafeteria and said:

"I wish you'd give me a rule of thumb which I could follow to decide whether my people should write directly to an outside concern for product information or make their request through some one in the Purchasing Department."

His heart was in the right place—his concern was to avoid trampling upon Purchasing prerogatives. But that did not make the question any easier to answer.

It is just as irrational to lay down a dictum that *all* contact between buyer and seller companies be made or arranged for by Purchasing as it is to allow the entire organization to individually negotiate their separate purchases. There should be a common-sense middle course—the "common-sense" judgment on individual cases based upon rather clearly understood basic principles.

### Principle No. 1

is that Purchasing, and *only* Purchasing, is held accountable for the actual negotiation of the transaction. Except in emergency or other unique circumstances, Purchasing has no right to delegate or abdicate that

**The purchasing agent cannot delegate his duties of negotiation and commitment**

**Common sense rather than ironbound policy should govern other vendor contacts**

**Good service to colleagues and to vendors will keep contacts in proper channels**

responsibility. It follows that Purchasing must handle, at the very minimum, those parts of the preliminaries which control the final negotiation. In practical terms, that means:

1. Choosing whom to solicit for quotations;
2. Requesting such firm quotations;
3. Awarding the order; and
4. Renegotiating any adjustments that may arise.

### Principle No. 2

is that Purchasing has an obligation to the rest of the organization to provide certain service in addition to the actual procurement of materials and supplies—in brief, developing pre-requisition information when, as, and to the extent desired.

How well or how satisfactorily Purchasing provides that service is the real answer to how much of pre-purchase contact is routed through Purchasing. Let's examine

### Representative Examples

of such contact from one extreme to the other. Here are some of the queries that commonly arise:

1. Sending in an advertising coupon for proffered literature.
2. Writing for literature.
3. Request for generalized technical data on a product.
4. Request for advertised samples, for observation or test simply to see if there may be an application of interest.
5. Query: "Does your XYZ product have such and such application?"

6. Query: "What do you have that you would suggest or recommend on this following problem?"

7. Query: "If we should so decide, how much money would be involved and what would be the delivery situation on your proposition?"

8. Request for sales presentation.

9. Request for technical design details.

10. Request for technical service visitation prior to purchase.

11. Firm quotations.

12. Purchase order.

13. Request for technical service visitation after purchase.

14. Negotiating post-order adjustments.

These representative examples break down naturally into three groups, as to policy and procedure to be followed.

For the first group, 1 through 4, it is too casual and too cumbersome to have such contacts formalized to the extent of requiring that Purchasing be requested to handle them.

The last four, 11 through 14, the purchasing agent *must* handle.

The middle six, 5 through 10, depend on circumstances. By all odds, the principal determining factor is whether Purchasing does or does not have a system and a record of performance to render the type of service that beats individual handling. That service and performance should meet

### Certain Criteria

1. Is it handled *promptly* by Purchasing? Our own goal is that requests and replies be handled the same day as received.

2. Is it *easier* for the person requesting to act through Purchasing, or directly? In either event, he must make his request clear. Often it is more difficult to make it clear to the purchasing agent than to the man who sells and thus knows the product so much more thoroughly. But there is a distinct advantage in that the story can be given to Purchasing by phone, by pencil note, or by dictated rough-draft memo. Not all inquirers have as thorough facilities for, and as much experience in preparing formal outgoing letters as the Purchasing Department.

3. Does it get back to the *proper party*? In a large organization, wherein for control purposes outgoing signatures are rigidly restricted, unless the supplier is clairvoyant about the only way replies arriving in a central mail room can be depended upon to reach the right

person is through reference to a clearly defined index. An inquiry received by our Purchasing Department is assigned a "Q" number, indexed with subject, originator, and date. The number itself shows who in Purchasing is handling the matter.

### Troublesome Areas

There are two areas which are especially troublesome. One of these is where technical exchanges become involved. For two engineers to get their ideas resolved through a purchasing agent and a salesman as their respective interpreters is like two Englishmen trying to carry on a conversation through two Frenchmen. The practical answer is to have direct communication established as early in the game as possible. Purchasing should be alert for the proper time to introduce the principals and bow out.

The second troublesome area is getting *order-of-magnitude* information on price and delivery, simply as guidance in planning or decision. Those inquiring, whether it be the

nowhere near ordering anything; that if we do, we will request form quotations, but in the meantime, all we want is the best-guess figure on price and delivery that is immediately available for return-mail reply.

This paragraph is set up in the form of a 6" x 3" printed notice, in black and red to get first attention. It is gummed along the left edge of the reverse side to stick on the margin of the inquiry letter, placed so as to cover the subject matter of the inquiry. Thus the notice must be seen and lifted to expose the inquiry itself. Our objective in using this system is two-fold: (a) to speed up replies for us, and (b) to save those replying from having to do a lot of useless firming of figures.

### Our Answer

to the "rule of thumb" question, therefore, is a three-fold statement:

1. We would prefer that casual inquiries, as illustrated by the first four examples, be made directly by the persons interested.

BR-440

THIS IS AN

## I N Q U I R Y

for INFORMATION to consider in making certain plans now contemplated.  
It is NOT a request for firm quotations

What is important to us is immediate reply to best round-figure accuracy immediately available — what do you forecast it will cost us delivered on our plant and how long after we order until it can be delivered on our plant? We shall not order from this inquiry, hence will view your reply as an appreciated informational accommodation, not a commitment.

Please address reply directly to the person signing and cite our reference number.

This simple notice attached to letters of inquiry has speeded up the service of information for the Ethyl Corporation and has saved vendors countless hours and dollars by avoiding premature and unnecessarily detailed cost computations.

person studying the project or the purchasing agent, frequently err in phrasing their requests by asking for "quotations" when all they really want is a quick, intelligent estimate. The salesman errs in going to the expense and delay of developing firm quotations on something that is still too nebulous to present any near-term order potential.

Our solution to this problem has been to prepare a short paragraph explaining that the inquiry is in fact simply an inquiry; that we are

2. We are obligated to handle the last block of four samples for the over-all organization.

3. Whatever you decide on the intermediate block of examples, 5 through 10, is perfectly satisfactory to the Purchasing Department, except that we want you to know that we have done our best to develop a good system to provide prompt and reliable service for you if you wish to take advantage of it, and we believe that the more of  
(Please turn to page 215)

# Formulas Take Hunches Out of Purchasing

By Tyler G. Hicks, M.E.

**T**HERE are some purchasing men who play the whole game by hunch, ordering materials when they "feel" the time is opportune. Many have been ordering this way for so long that their hunches are correct in practically every case. However, every now and then a hunch will prove incorrect, and interrupted manufacturing schedules, layoffs, and loss of profits result. This is especially common today because business conditions vary widely from one industry to another and keeping in touch with all of them is almost impossible.

Good industrial "hunch" purchasers, though often proud of their abilities, overlook one fact. Their success in purchasing results from an analytical ability which enables them to mentally review all, or nearly all, the factors involved in correct purchasing. They may not use numbers to express their hunch, but the numbers are there, nevertheless. It is unfortunate that these men neglect purchasing formulas because they could eliminate many of the serious errors which cause production to bog down.

Assuming stable markets, best quantity buying practice is a mathematical problem

Don't be scared off by a complicated-looking formula; it's easier than you think

Reliance on a tested formula eliminates the hazards of overlooking essential factors

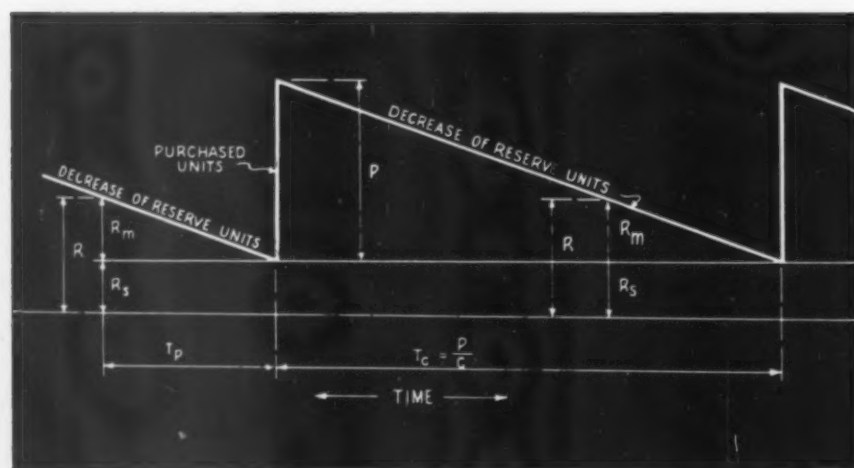
Perhaps everyone shies away from complicated-looking formulas because the mental effort required for their solution is a little beyond everyday work. This, however, is a misconception, as anyone who has worked with purchasing and manufacturing formulas knows. Once solved, the results of purchasing and manufacturing formulas are good for several months, whereas hunches must be constantly reviewed to see if all factors still hold. Besides, many of the items in the formulas are constants and need be evaluated only once. After that they can be set up as standards, a procedure which usually simplifies all future work with the formulas. In the long run, the man who uses formulas together with mature judgment obtains more accurate re-

sults and spends less time on ordering problems than the man who plays the hunch.

The basic purchasing problem in any manufacturing industry, large or small, is composed of two parts; (1) how much should be purchased, and (2) what is the minimum cost quantity? These two problems arise in every industry, regardless of what type of material is purchased. The material may be iron ore as it comes from the ground or highly finished machine components; basic purchasing principles still hold.

The many factors which influence a purchasing problem could be written in paragraph form, tabulated, or broken down into short clauses. However expressed, so long as they are in word form, evaluation of the relations between the factors is difficult and time consuming. Only when expressed in mathematical terms can the relationship between various factors be accurately evaluated. Hence, all mathematical expressions related to purchasing are handy tools for experienced purchasing men.

Graph of the factors common to purchasing problems for continuous manufacture. From graphs such as this, valuable purchasing formulas can be derived. The various factors plotted are discussed in the text of this article.

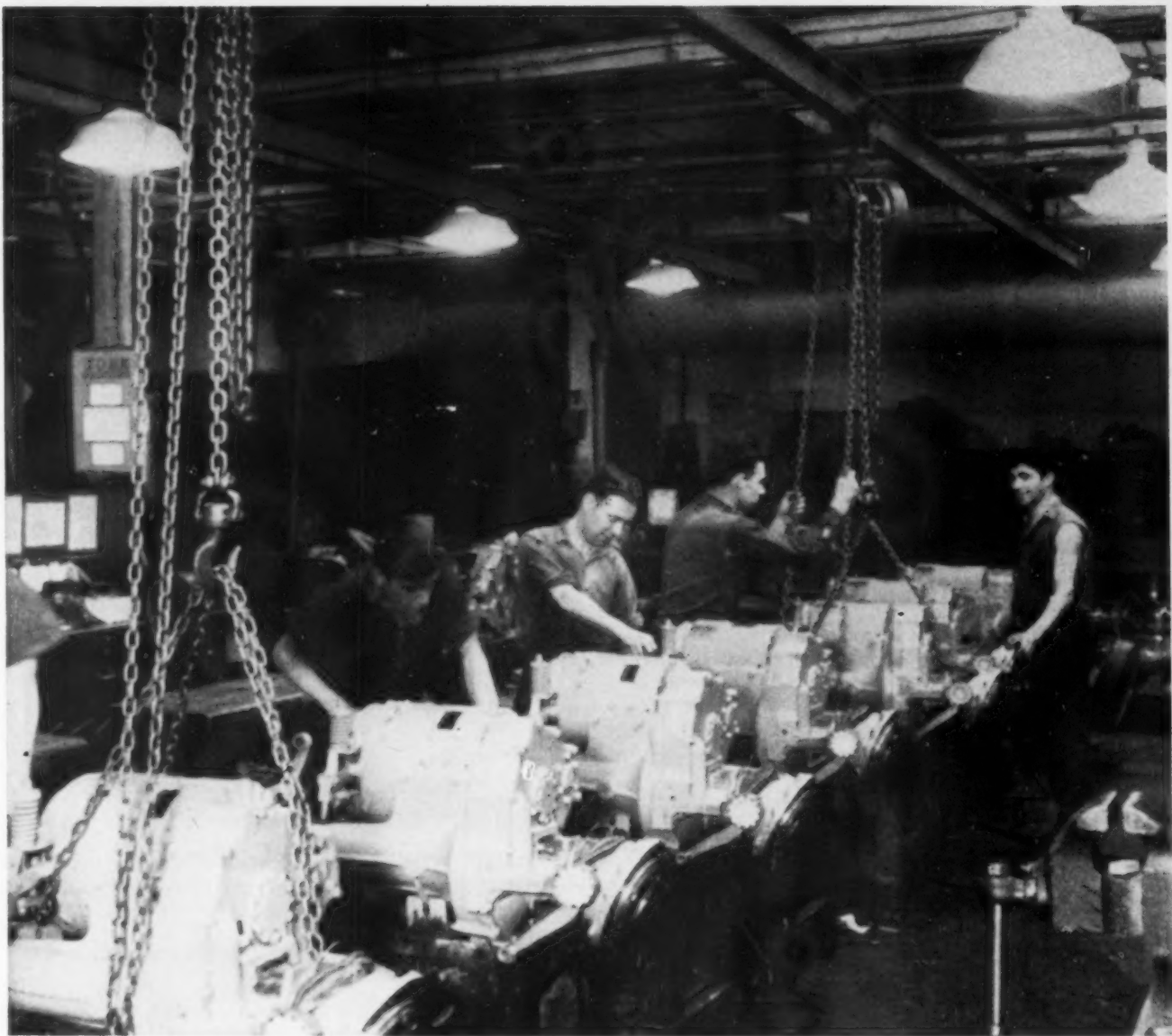


## Purchasing Formulas

Every mathematical formula or equation has as its basis either a graph, a physical law, or a theory of the existence of a law. Purchasing formulas are usually based on a graph—one which shows, approximately, the relation between quantity bought and used. Figure 1 is one such typical graph.

The graph, Figure 1, correlates all the factors involved. Thus, the height of the diagram,  $P$ , represents the number of units to be purchased





Low-cost manufacturing is dependent on adequate reserves of purchased components. Purchasing formulas permit accurate estimates of quantity and scheduling for the most economical program of procurement.

such that the total purchase cost is a minimum. Total purchase cost includes all items such as handling and interest charges.  $P$  may be in any units; gallons, pounds, yards, etc. Yearly rate of use or consumption of the materials,  $C$ , is not plotted directly but equals  $P/T_c$ .  $T_c$  is the consumption time, years, required to use the  $P$  units of materials purchased.  $T_p$  is the purchasing or procurement time in years between origination of the purchase order and storage of the material in the plant storeroom.  $R_m$  is the minimum reserve needed to permit manufacturing to continue between origination of the purchase order for  $P$  units and the time these units are stored and ready to be issued. Consumption at the  $C$  rate is assumed during this period. Since

operation with only the minimum required units on hand is not good practice, a reserve stock,  $R_s$ , is assumed. Then, as can be seen, the actual reserve on hand when the purchase order for more material is placed, is  $R = R_m + R_s$ . If  $r = R/R_m$ , then

$$R = rT_p C \dots \dots \dots (1)$$

Although proof will not be given here, it can be shown that the number of units for minimum total purchase cost is,

$$P = \sqrt{\frac{L}{(k+h)}} \dots \dots (2)$$

$$\text{or } P = \sqrt{\frac{2LC}{(cI + 2AS)}} \dots (2a)$$

$$\text{where } k = \frac{cI}{2C} \text{ and } h = \frac{AS}{C}$$

and

- $A$  = area, square feet, required for storage of one unit
- $c$  = unit cost, including transportation charges, dollars
- $I$  = interest rate on borrowed money, expressed as a decimal
- $L$  = total purchase cost, dollars, includes all direct and indirect costs related to the order
- $S$  = annual storage charge, dollars per square foot of storage space

#### Profit Objectives

These formulas are suitable for many industries where working capital is small. However, when large sums of money are invested, purchases based on a desired rate of profit are often thought more suitable. For these conditions,

$$P = 2C [b - T_p (r-1)W] / W \dots (3)$$

where

$b$  = profit on the units as sold, expressed as a decimal

W = annual profit desired on working capital, expressed as a decimal

The simplest way to show the use of these formulas is by applying them to a typical purchasing problem. In doing so, all the factors ordinarily encountered in practical purchasing will be considered.

**Problem:** A company has used an average quantity of 1,762 gallons per month of a given material during the last six months. Records show that 80,000 units were sold during the first half of this year. It is estimated that 125,000 units will be sold during the second half of the year. Unit purchase cost is \$0.12 per gallon, total purchase cost is \$8, and the interest rate is 5%. The annual storage charge for the material is \$6.50 per square foot. An estimated 0.00075 square feet per gallon is required for material storage.

Total annual profit desired by the firm has been set at 30% on the working capital. A profit of 2.8% is made on the units as sold. Delivery period is estimated at five weeks and a 15% safety factor is desired for material ordering. Determine the number of units to be purchased for minimum purchase cost and the number to be purchased to obtain the desired rate of profit on working capital.

**Solution:** From the data given, formulas 2a and 3 appear suitable. Once it is known which formulas are to be used, all known data is grouped as follows.

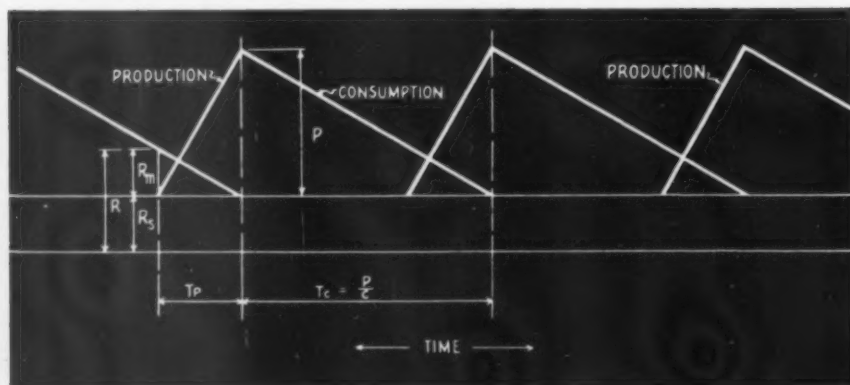
For formula 2a:

L = \$8

C = yearly rate of use based on past experience

$$= 12 \frac{(\text{average monthly use})}{\text{new production}} \frac{\text{past production}}$$

Factors which influence material requirements and purchasing for intermittent manufacturing industries present a somewhat different pattern, but can be analyzed in a similar way to derive useful formulas determining economical purchase quantities.



$$= 12(1762) \frac{125,000}{80,000}$$

C = 33,050 gallons per year

c = \$0.42

I = 0.05

A = 0.00075

S = \$6.50

Then,

P =

$$\sqrt{\frac{2(8)(33,050)}{0.12(0.05) + 2(0.00075)(6.50)}} \\ P = 5,810 \text{ gallons}$$

This is about 3 months supply, which must be purchased to keep costs at the minimum.

For formula 3:

r = 1.15

and

$T_p = 0.0962$

Hence,

P =

$$\frac{2(33,050)[0.028 - 0.0962(1.15 - 1)(0.30)]}{0.30}$$

P = 5,220 gallons

Since the minimum number of units to be ordered is given by the desired rate of profit formula, purchasing would be based on this relation because minimum annual purchasing costs would be obtained. To simplify records and orders, 5,300 units would be purchased at the proper intervals. From formula 1,

$$R = 1.15(0.0962)(33,050)$$

R = 3,360 gallons

Therefore, about 7 weeks reserve would be on hand when the purchase order for material was placed.

In intermittent manufacturing a similar problem exists between the production of parts and their use in the assembly process. Figure 2 is a graph of the relations between production, consumption, time, and number of units ordered. As before, similar factors affect ordering time, quantity, and material use. However, the difference between the usual purchasing problem and in-

termittent manufacturing causes a change in the graphs. This is seen by a comparison of Figs. 1 and 2.

At some point, R, when the reserve has been reduced to the point where another order is necessary, the assembly department sends through a requisition. Production begins and continues steadily until the required number of units, P, are on hand. Consumption, in the form of assembly of the manufactured parts then begins to reduce the production reserve according to some curve such as that shown. The similarity between this and the ordinary purchasing problem can therefore be readily seen. As a result the same symbols are used on both graphs. Formulas for ordering are, however, different.

Quantity to be ordered to obtain the desired profit on the working capital is,

$$P = \sqrt{\frac{2npC}{(n+ZC)(XW+2AS)}} \quad \dots (4)$$

where

n =  $\frac{rPC}{R}$  = equivalent annual manufacturing rate expressed in the same units as P

p = preparation cost, dollars

X = standard cost of product, dollars

Z = 2r-1

and the other symbols are as before.

Application of this equation is similar to that given in the problem above.

#### Using the Formulas

None of these formulas require the use of anything more than simple arithmetic. For finding the square roots in formulas 2, 2a, and 4, a table of roots is convenient and saves time. Special slide rules for the solution of these formulas have been made but unless the formulas are used frequently, the slide rule does not save much time.

The five formulas presented in this article have been used in many industries and found satisfactory for all ordinary problems. They replace the hunch with numbers which have meaning to everyone connected with a purchasing problem. Regardless of how long a man has been purchasing materials for a given industry, he cannot ignore the accuracy of calculations based on the profit plans of his firm. Arriving at the results may require a little more time in the beginning but the values obtained are usually more accurate than the best of hunches. That's why greater numbers of purchasing men are relying on formulas today instead of the old fashioned hunch.

## Have We Found the Formula for INDUSTRIAL STABILITY?

Coming in a time of troubled labor relations, the new General Motors-United Auto Workers 5-year contract has been greeted generally with surprise and relief — and some questioning. The labor-management compromise appears to many as the forerunner of widespread, long-range industrial peace. Others, optimistic about immediate results, see possible difficulties in carrying out the agreement later on. We have asked purchasing agents, who are directly interested in the question of labor costs, for their views on some of the basic issues presented by this important new development.

① In your opinion, does the General Motors 5-year labor agreement set a pattern for long-term stability in labor relations ?

YES —  65 %  
NO —  35 %

② Do you agree with General Motors President C. E. Wilson that the agreement "will have a stabilizing influence ... not only on our business, but on the economy of the whole country" ?

YES —  66 %  
NO —  34 %

③ Do you see any dangers in achieving such stability by freezing labor costs for an extended period, in view of possible changes in general economic conditions ?

YES —  55 %  
NO —  45 %



④ In the event of economic decline, do you believe that such agreements would tend to stabilize employment and income or aggravate such conditions ?

STABILIZE ————— 42%

AGGRAVATE ————— 58%

⑤ Do you believe that such agreements will force prices up beyond present levels ?

YES ————— 54%

NO ————— 46%

⑥ Do you believe that such agreements tend to commit the nation to a permanently high-cost and high-price economy ?

YES ————— 72%

NO ————— 28%

## WHAT THEY SAY

"Believe this agreement will keep us from inflation or a recession until the country has a chance to sober up under the present administration."

"Five years is a long time for the union to go without showing some activity to its members. Can they sit still that long or will they have to begin to make other requests from the company in the meantime?"

"The agreement keys wages to a fundamental, impartial index. As such, it levels out peaks and valleys and should tend to stabilize the business cycle over a long period of time."

"In view of the many difficult economic, political and international problems, I question whether anyone or any company can clearly estimate the situation at least on a 5-year cost or price basis."

"Generally speaking, the agreement will tend to eliminate costly strikes and create desire toward cooperation between both factions."

"The acts of the Federal Government have already committed us to a high-cost and high-price economy. This (agreement) is the result and not the cause."

"In a period of high production in a 'still hungry' market for many types of material, such an agreement

seems almost too good to be true...time will tell"

"The G.M. policy tends to accept and formalize the labor and price precepts of the Government. In 1929, individuals went broke. This time, if there is a 'bust', the government will also be directly involved. In such a situation, even the G.M. agreement could not be maintained."

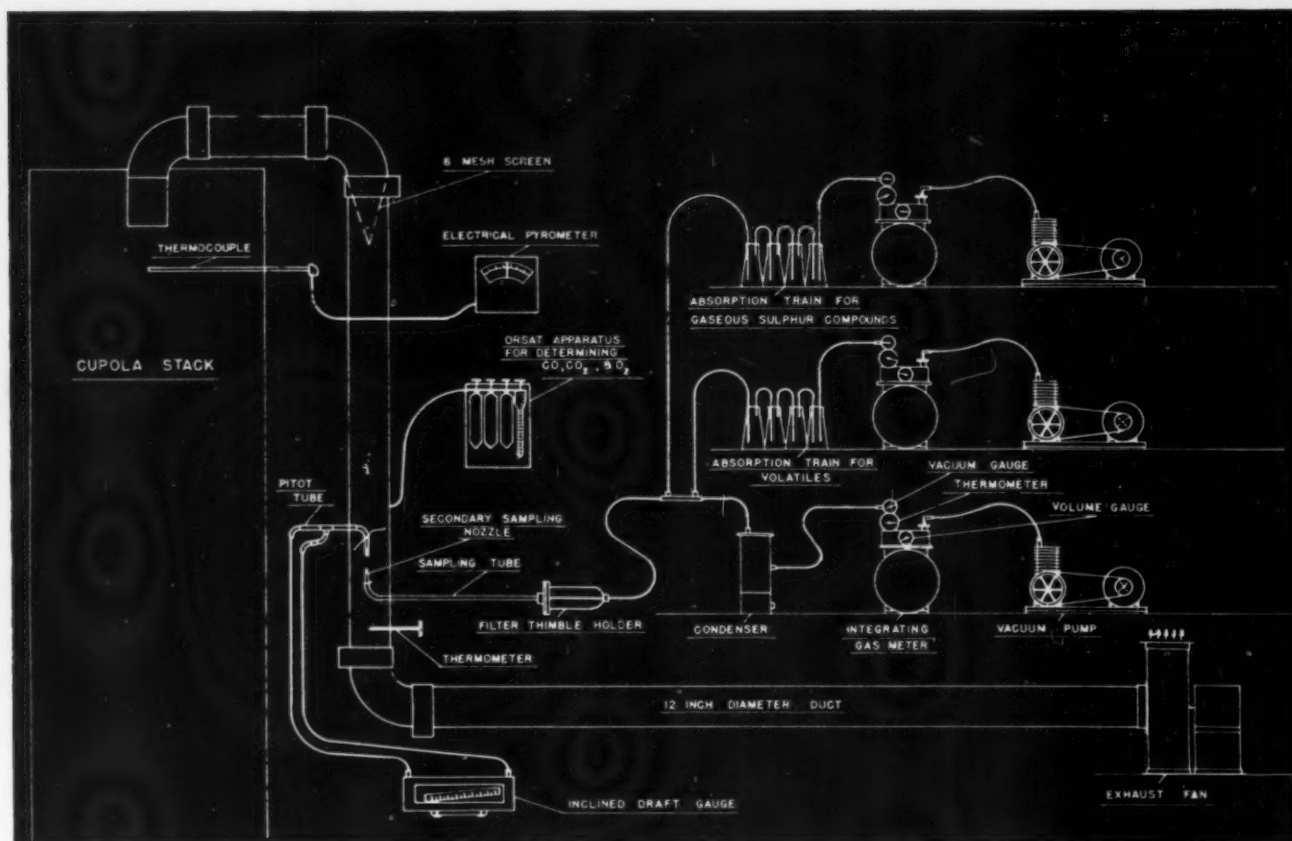
"Keep prices at present or lower levels and wages up. More and higher wages tend to stimulate business as it will increase buying power. In turn, prosperity."

"Can labor and its leaders be trusted to keep the agreements they make, if they are called on to 'give' rather than to 'receive'? What will they want at the end of the 5 years?"

"In a permanent high-cost, high-price economy, the worker, the consumer, and the manufacturer all tend toward becoming acclimatized to prevailing conditions. If we are accustomed to steady improvements, we will never be satisfied with less. Thus we encourage continued progress and prosperity."

"Some smaller companies in a weaker financial condition than General Motors cannot follow their lead, and workers in these companies will be dissatisfied and labor troubles may develop."

# What Price Smog Control?



Schematic diagram of a smog control unit developed by Menardi & Co.

Smog conditions result from geographical, atmospheric, and smoke factors

Seven general types of equipment have been developed to cope with smog

There is no cure-all; each problem must be separately analyzed and treated

● By Keenan Goodman

Purchasing Agent  
Research Associates, Los Angeles

A MAJOR problem for hundreds of industrial concerns throughout the United States today is the question of how to conform with the requirements of local smog-control regulations without going bankrupt.

Smog, according to the United States Weather Bureau, is a combination of smoke and fog. This is an important point to bear in mind, since it is a rather well known fact that smoke and fog may be created by many non-industrial sources.

However, the entire question of smog control has been so distorted

by technical misinformation that hyper-emotional politicians have in several cases found it necessary to pass premature legislation—which, in turn, has cost American business many hundreds and thousands of dollars in terms of fines and unnecessary equipment without lessening the number of particles that polluted the atmosphere by more than a fractional margin.

Few responsible citizens would now endeavor to argue that smog represents a desirable atmospheric condition, since it can be as irksome to the businessmen who are too fre-

quently blamed for its existence as to the residents who do not expect to pay the cost of its elimination; but, as more than one purchasing agent can now attest, it's much easier to talk than to do something about the weather.

For example, let's consider the experience of a P. A. for a small foundry in the Los Angeles area: He was assured by an expert that cyclone separators had solved the air-pollution problem for a number of foundries in Pittsburgh; so, after obtaining confirming evidence from the Pittsburgh foundries, he per-



Union Oil Company engineer inspects a combination cyclone separator and ultrasonic siren which has been used successfully to reduce air pollution at the Wilmington, Cal., refinery.

suaded his boss to put up several thousand dollars for a separator installation. It wasn't a bad purchase in any sense of the word, since the boss could have lost more than the cost of separator equipment in fines if he had made no effort to control the output of his smokestack; but, due to a combination of operational and atmospheric conditions which exist in Los Angeles, but not in Pittsburgh, the separator installation was only mildly effective—and now it seems that the foundry will have to purchase another type of equipment.

Authorities at Stanford Research Institute and elsewhere agree that smog is the result of three contributing factors:

(1) Geographical conditions—such as the mountains which rim Los Angeles and other coastal cities.

(2) Atmospheric conditions—which enable the atmosphere in a given locality to retain relatively large quantities of moisture.

(3) Man-made smoke—which may come from automobiles and household incinerators as well as from industrial smokestacks.

Theoretically, smog can be eliminated if any one of the above factors is eliminated. However, it seems rather safe to say that no abrupt alterations in geographical conditions would be practical in most localities at this time.

A few scientists maintain that the second factor could be eliminated by throwing up a supersonic barrier to precipitate or demisterize the air which may enter certain cities through fairly small "bottleneck" areas; but, since no economical and efficient generators for this type of work have yet been developed, many practical men are inclined to agree that it might be more economical to give some of our smog-plagued municipalities back to the Indians.

Therefore, it seems more than likely that most of our air-pollution control efforts—in the immediate future, at any rate—will be devoted to the problem of minimizing the production of man-made smoke.

No completely satisfactory solution to this problem can be anticipated, since even the least expensive types of precipitators or agglomerators appear to be well beyond the financial means of the average citizen who makes use of an incinerator or automobile. However, experience in the city of Pittsburgh has indicated that at least a 50% improvement in atmospheric conditions can be achieved where:

(a) Competent executives and technicians are employed by the local government to develop and enforce sane and practical control measures.

(b) Businessmen and smog-con-

trol authorities are allowed to cooperate—to work together with the idea that industrial smoke is undesirable, but not a menace which can be eradicated with burdensome penalties and purchases of unsatisfactory equipment.

Sound purchasing techniques are fundamentally essential in any event, because there's no such thing as a cure-all for industrial air-pollution problems—regardless of how many different products are now being produced for this purpose.

For instance, ultrasonic sirens have been used with considerable success in the agglomeration of smoke particles resulting from the manufacture of sulfuric acid and the retorting of oil shale, respectively, at Chemical Construction Corporation of New York and at Union Oil Company's refinery near Wilmington, Calif. Yet the same agglomeration equipment failed to meet requirements for Aluminum Company of America at Vernon, Calif.

Why? Alcoa's A. E. Huotari says it's principally a matter of equipment costs and operational efficiency, but agrees that the siren his company tested might be quite satisfactory for a majority of small-processing installations and believes new-type high-frequency sirens may at least come much closer to Alcoa specifications. Meantime, the Vernon plant is making satisfactory use of water-wash equipment.

Generally speaking, seven different types of industrial smoke control equipment are now being manufactured and successfully used in the United States. They include:

(1) Cyclone separators—which introduce a stream of smoke or gas into a cylindrical collector which spirals downward, releasing particles centrifugally through apertures at the sides and allowing cleansed air to rise in an upward spiral or vortex motion through the top of the device. This type of equipment has been used with particular success where smoke particles are larger than 10 microns in size. It is now being produced by a number of companies—including Airfan Engineering Company of Los Angeles, and Agat-Detroit Co. at Ann Arbor, Mich.

(2) Dynamic separators—wherein power driven fans are used to water-wet smoke or dust particles. Units of this type have been utilized successfully where there is no particular need to reclaim wetted particles as raw chemicals. The equipment is being manufactured by Buffalo Forge Co. at Buffalo, N. Y.



(3) Electrical precipitators—wherein a unidirectional electric discharge is maintained between two sets of electrodes, through which gases are passed. The discharge subjects the particles in the gas to ionization, so that the particles will collect on negatively-charged electrodes. Equipment of this type is now being manufactured by Aerotec Corporation at Greenwich, Conn.

(4) Filter collectors—wherein bags made from fibrous materials (such as wool, cotton, asbestos, or plastic fabrics) are used (individually or in sequence) to filter particles of various sizes from smoke or dust-laden air—much the same as fluids are filtered. These collectors appear to be most useful where high heat resistance is not required. They are being manufactured by the Dust Control Division of American Air Filter Co., Inc., at Louisville, Ky.

(5) Static washers—wherein particle-laden air is passed through spray chambers, some of which may be equipped with baffle plates for increased wetting action. Wetted

are now being produced by Ultrasonic Corp., Cambridge, Mass.

(7) Venturi scrubbers—wherein a high-velocity stream of air impinges on a low-velocity water curtain, thereby impacting the solid particles into the water droplets. Wetted particles may then be disposed of centrifugally. Equipment of this type comes from Peabody Engineering Corp., New York.

Advantages and disadvantages of these different types of equipment are too numerous for comprehensive consideration in this article, but can be readily ascertained in most cases through an investigation of manufacturers' specifications and existent installations. Meantime, the wise P. A. should bear in mind two very important pointers:

(a) Several different types of equipment are sometimes required for the efficient recovery of smoke or dust particles.

(b) No existent equipment may be required in a number of special circumstances.

John Hermes of Spun Metal Products, Inc., encountered one of the latter circumstances not long

ago when the city fathers at La Placenta, Calif., began applying pressure to force his company to buy smog-control equipment. It seemed like a silly thing to do, because nobody in town thought there was an air-pollution problem until a local newspaper made it an issue in a local political crusade. But that was beside the point, since logic isn't necessarily a characteristic of campaign issues. So John, being an energetic P. A., began investigating the different types of smog-control equipment that were then being manufactured.

There wasn't a lot of difference in the prices of the units that seemed to be most suitable, and John couldn't perceive any appreciable technical advantages in competitive products. So he got a consulting engineer to double-check his conclusions.

"You don't need any smoke-control equipment," the engineer announced after one quick look at the Spun Metal plant.

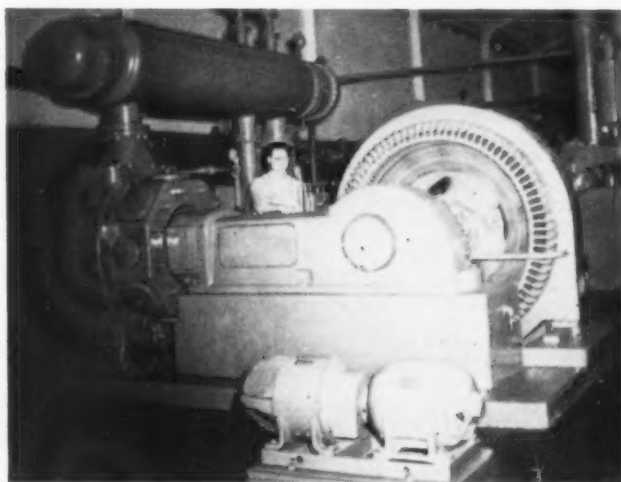
"I know," John agreed, "but I'd hate to have to prove it to the satisfaction of our city council."

"Why that should be easy. Look at the way your plant is situated—well away from the residential district, at an angle to the entrance of an uninhabited valley and shielded by mountains from two sides. You'd have to rig up a special pipeline to get smoke into the town proper, no matter how the wind was blowing."

"Would you mind telling that to our city council?"

"Of course not. And I can get at least a dozen experts to back me up."

The advice of the consulting engineer and his experts cost about \$200, but they saved John's company a good \$2000.



Special power plants may not be essential for the operation of smog control equipment. At C. F. Braun & Co. plant, Alhambra, Cal., compressed air is obtained from the central plant compressor.

particles may then be collected centrifugally or by impact. Static washers are manufactured by Dust Suppression & Engineering Co., Lake Orion, Mich.

(6) Ultrasonic precipitators—or sirens whose frequency output may be regulated for audible or inaudible sound waves or vibrations at frequencies of 1 to about 30 kilocycles, in order to agglomerate smoke or dust particles of different sizes so that the force of gravity will prevent suspension of the particles in the atmosphere. Ultrasonic sirens

A Los Angeles brass and aluminum foundry has used this smoke agglomeration equipment with considerable success.



# Quality Report Aids the Purchasing Agent

**T**HE purchasing agent, of course, is always on the lookout for products, components or raw materials that will permit his particular enterprise to manufacture the most desirable product at the lowest cost consistent with the specifications set up by the design engineer. And along with quality of product he is concerned with the dependability of the producer always to ship the same quality and on the date promised. These latter requirements can be classified as service. But in this classification of service it is quite conceivable that the purchasing agent is overlooking one important aspect that could save his company real money.

This phase of service consists of reporting quality of the products or parts in a particular lot in the form

How frequency distribution reports add meaning to quality standards  
Buyer as well as manufacturer benefits from statistical analysis  
Some representative examples of quality control affecting acceptability

**By Owen J. Craig**

of a frequency distribution by the vendor. This quality report (QR) not only verifies pictorially whether or not the parts conform to specifications but also it enables the inspection department to reduce its incoming inspection by approximately 90%. And further, it can be used as a basis for judgment by the design engineer or the production manager when making deci-

sions affecting the assembly of their products.

A quality report by frequency distribution is the natural outgrowth of the statistical method of controlling the quality of any mass-produced item. The frequency distribution is the foundation of this method. It is simple to make and to understand. And those companies who use statistical methods of quality

**Figure 1.** Quality report shows how parts lie within acceptable tolerances.

PRODUCT <u>COMPRESSION SPRING</u>		CUSTOMER _____		QUOTE NO. <u>82218</u>	
CHARACTERISTIC <u>P@L = 1.350"</u>		PART NO. <u>76B49</u>		REV. <u>3.8.84-47</u>	
INSP. METHOD <u>217-PC-27</u>		SPECIFIED LIMITS <u>2" 1923 - 4" 1100 @ 1/2"</u>			
SAMPLE DRAWN <u>BEFORE SHIPMENT</u>		EQUIV. INSP. LIMITS <u>3.812 - 4.625 @ 1.350"</u>			
HSC ORDER NO.	<u>78948</u>	<u>75361</u>	<u>77021</u>	<u>77021</u>	
CUSTOMER ORDER NO.	<u>9133 87</u>	<u>9133 76</u>	<u>9133 65</u>	<u>9146 75</u>	
INSPECTED BY	<u>M.E.W.</u>	<u>M.D.L.</u>	<u>M.E.W.</u>	<u>M.E.W.</u>	
DATE	<u>12-12-46</u>	<u>2-20-47</u>	<u>3-28-47</u>	<u>4-2-47</u>	
<u>1.000</u>					
<u>1.025</u>					
<u>1.050</u>					
<u>1.075</u>					
<u>1.100</u>					
<u>1.125</u>					
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<u>2.675</u>					
<u>2.700</u>					
<u>2.725</u>					
<u>2.750</u>					
<u>2.775</u>					
<u>2.800</u>					
<u>2.825</u>					

**Figure 2.** One lot is usable; the other is likely to cause trouble in use.

[illegible]

Along the lines of "seeing is believing", consider an example of reporting the quality of a lot of springs by two different presently acceptable methods. In both cases the report shows that 5% of the lot is outside the tolerance limits. (In

As another example, consider the frequency distribution set forth in Figure 3. Here 50% of the product is outside specifications in both instances. In the first, the spread of the product is great and falls beyond the limits on both sides, giving reason to reject the lot. However, in the second instance the spread of the parts is very small and the parts are hovering around the lower tolerance limit. Although 50% of the parts are outside specification, it is quite conceivable that they could be used because of the narrow spread.

These are but a few examples of how the frequency distribution, used to report quality of incoming material, can help the purchasing agent and aid his co-workers to produce better materials or products at lower cost. The QR also guarantees to the purchasing agent that his supplier is taking every precaution to meet his requirements.

[illegible][illegible]



# Contract Renegotiation

**By A. N. Wecksler**

The problem of informing suppliers that the business is "renegotiable" is a fairly simple one. In placing procurements for materials and supplies required in renegotiable business, the purchasing agent merely notes on the purchase

...plying a contract  
negotiation, and tha

**IF** your company undertakes military orders, whether as a prime contractor or subcontractor, get acquainted with the regulations concerning renegotiation.

While all prime contractors and subcontractors are required under the law to inform their suppliers that they in turn are supplying on a renegotiable military contract, it is recognized that in the various tiers

Obviously, where the purchase order clearly identifies the business as subject to renegotiation, the supplier has no problem. Where such a disclosure has been left out, suppliers are faced with a problem of how to determine whether they are supplying on a renegotiable contract.

from the Superintendent of Documents, Washington 25, D. C., for \$2.50. A quarterly supplement is published to these regulations, carrying a complete index of firms which hold renegotiable defense contracts, listing such contracts by number.

A numerical listing of these contracts is also available for purchase from the Superintendent of Docu-

On the question of rewarding the efficiency of the contractor, the Military Renegotiation Regulations merely state that the efficiency of the contractor is to be taken into account in considering how much profit he should be allowed to retain.

1. The quantity of production; for example, in relation to available physical facilities; the meeting of production schedules; the expansion of facilities; the maximum use of available production facilities.

2. The quality of production; for example, the record of maintenance of standards of quality; the rejection record; reported mechanical or other difficulties in the use of installation of the product.

3. The reduction of costs; for example, the decrease in costs per unit of production or per unit of sales as between fiscal years and as compared with other contractors producing the same or similar products where the operations are reasonably comparable; the decrease in administrative, selling, or other general and controllable expenses; the decrease in prices paid vendors for purchased materials and sub-contracted items or units.

4. The economy in the use of materials, facilities, and manpower; for example, the decrease in quantity of materials used in relation to production and the number of employees in relation to production; the reduction of waste.

5. Particular consideration must be given to contracts and subcontracts the price of which was based on estimated costs. Appraisal of the attained results as contrasted with the original cost estimates requires separate consideration of those elements of costs which are wholly outside the control of the contractor and those which he entirely or partly controls. The fact that the realized costs are less than the original estimates does not necessarily mean that the contractor has demonstrated efficiency, nor does realization of actual costs in excess of the original estimates necessarily mean that the contractor's

the case of a supplier delivering on a number of military contracts which are subject to renegotiation, and in addition on military contracts held by the same prime contractor, which are not subject to renegotiation. To further complicate the problem, the same subcontractor might be delivering identical supplies to the same prime contractor on civilian business.

ments at a cost of 25¢ each. This listing will give all suppliers a quick check on whether they are supplying on any renegotiable contracts.

Where a supplier has been diligent in ascertaining from his customers whether he is supplying on renegotiable business and has checked against the lists mentioned in the foregoing, such caution generally will be considered adequate.

Where a contractor or subcontractor does not actually deliver a cumulative total of \$100,000 worth

HMR 702-1 - INSTRUCTIONS FOR PREPARING THE STANDARD FORM OF CONTRACTOR'S REPORT (JAN 1945)		REVENUE OFFICE FORM NO. 10-3000 JANUARY 1945
<p><b>GENERAL COMMENTS</b></p> <p>An understanding of the Military Renegotiation Regulations issued pursuant to the Renegotiation Act of 1942 is essential to the contractor who is required to file the Standard Form of Contractor's Report. A Synopsis of Methods for Identifying Contracts and Subcontracts Subject to the Act is contained in the Renegotiation Act of 1942.</p> <p>The contractor price for the Renegotiation Regulations, including the Standard Form of Contractor's Report, is printed on a standard form known as HMR 702. Subcontractors should be advised that the Superintendent of Documents, U. S. G. P. Office, Washington, D. C., is the source of the Standard Form of Contractor's Report and the Superintendent of Documents, U. S. G. P. Office, is the source of the Standard Form of Contractor's Report.</p> <p>Filing, in duplicate, of the Standard Form of Contractor's Report is not required on or before the last day of the month following the close of the fiscal year in which the contract was made. The contractor is required to file a copy of the Standard Form of Contractor's Report with the Renegotiation Board, U. S. G. P. Office, Washington, D. C., in which case a single copy is sufficient.</p> <p>A contract or subcontract is not subject to renegotiation unless it is for an amount of \$1,000.</p> <p>The following instructions are arranged in the order of the Standard Form of Contractor's Report, additional copies of which are required.</p> <p>1. (a) A copy of your public report, and</p> <p>(b) A copy of your report prepared for the public report, and</p> <p>(c) A copy of your report prepared for the public report, and</p> <p>(d) A copy of your report prepared for the public report, and</p> <p>(e) A copy of your report prepared for the public report, and</p> <p>(f) A copy of your report prepared for the public report, and</p> <p>(g) A copy of your report prepared for the public report, and</p> <p>(h) A copy of your report prepared for the public report, and</p> <p>(i) A copy of your report prepared for the public report, and</p> <p>(j) A copy of your report prepared for the public report, and</p> <p>(k) A copy of your report prepared for the public report, and</p> <p>(l) A copy of your report prepared for the public report, and</p> <p>(m) A copy of your report prepared for the public report, and</p> <p>(n) A copy of your report prepared for the public report, and</p> <p>(o) A copy of your report prepared for the public report, and</p> <p>(p) A copy of your report prepared for the public report, and</p> <p>(q) A copy of your report prepared for the public report, and</p> <p>(r) A copy of your report prepared for the public report, and</p> <p>(s) A copy of your report prepared for the public report, and</p> <p>(t) A copy of your report prepared for the public report, and</p> <p>(u) A copy of your report prepared for the public report, and</p> <p>(v) A copy of your report prepared for the public report, and</p> <p>(w) A copy of your report prepared for the public report, and</p> <p>(x) A copy of your report prepared for the public report, and</p> <p>(y) A copy of your report prepared for the public report, and</p> <p>(z) A copy of your report prepared for the public report, and</p>		
<p><b>HMR 702 - STANDARD FORM OF CONTRACTOR'S REPORT FOR RENEGOTIATION OF CONTRACTS AND SUBCONTRACTS SUBJECT TO THE RENEGOTIATION ACT OF 1942</b></p> <p>(EXPLANATION CONTRACTS AND SUBCONTRACTS HAVE SUBJECT TO THE RENEGOTIATION ACT OF 1942)</p> <p>1. IF YOUR RENEGOTIABLE DOLLAR DURING THE FISCAL YEAR COVERED BY THIS REPORT WAS LESS THAN \$100,000 (SEE HMR 702-1), DO NOT USE THIS FORM. INSTEAD, USE STATEMENT OF NON-APPLICABILITY, HMR 703.</p> <p>2. THIS FORM, HMR 702, IS TO BE SUBMITTED IN DUPLICATE: A SINGLE COPY OF EACH OF THE FINANCIAL STATEMENTS OUTLINED IN ITEM 1 TO BE SUBMITTED.</p> <p>3. See enclosed Instructions (HMR 702-1).</p>		
<p>TO: The Military Renegotiation Policy and Review Board The Pentagon, Washington 25, D. C.</p>		
<p>1. WE ATTACH A COPY OF EACH OF THE FOLLOWING FINANCIAL STATEMENTS FOR OUR FISCAL YEAR ENDED 19__</p> <p>INCOME AND PROFIT AND LOSS STATEMENT FOR THE FISCAL YEAR, STATEMENT OF RECEIPTS FOR THE FISCAL YEAR, BALANCE SHEET AS OF THE CLOSE OF THE FISCAL YEAR</p> <p>THESE FINANCIAL STATEMENTS APPEAR IN EITHER OUR ANNUAL REPORT OR ANOTHER REPORT PREPARED FOR OUR OWN USES FOR FILING WITH THIS REPORT. IF WE HAVE ENCLOSED, WE DO NOT HAVE EITHER OF SUCH REPORTS.</p>		
<p>2. OUR NET SALES DURING THIS FISCAL YEAR (Sales are referred to in the Renegotiation Act of 1942 as "gross sales")</p> <p>A. SUBJECT TO RENEGOTIATION</p> <p>B. NOT SUBJECT TO RENEGOTIATION</p>		
<p>3. WE ATTACH, IN DUPLICATE, A SUMMARY DESCRIPTION OF THE METHODS WE USED IN SEGREGATING OUR RENEGOTIABLE SALES, ETC., LISTED ABOVE UNDER:</p> <p>11-a-1 DIRECT SALES UNDER RENEGOTIABLE PRIME CONTRACTS AND PURCHASE ORDERS</p> <p>11-a-2 INDIRECT SALES UNDER RENEGOTIABLE SUBCONTRACTS OF ANY YEAR, PURCHASE ORDERS, ETC.</p> <p>11-a-3 OTHER INCOME SUBJECT TO RENEGOTIATION</p> <p>11-b SALES UNDER RENEGOTIABLE CONTRACTS INDIVIDUALLY EXEMPTED BY THE SECRETARIES OF THE DEPARTMENTS OF THE ARMY, THE NAVY, AND THE AIR FORCE.</p>		

performance has been inefficient.

In this connection particular attention must be accorded to costs representing subcontracts, especially those for fabricated parts and assemblies. Similar consideration may also be required of costs of materials and supplies. In consideration of the composition of cost estimates used in negotiating contract prices, it must also be recognized that such estimates will normally reflect all foreseeable contingencies.

The fact that some or all of such contingencies do not materialize, so that realized costs are less than those estimated, may indicate not that the contractor had performed efficiently, but rather that the circumstances were such as substantially to eliminate the risk assumed. Thus, in the majority of cases, the appraisal of efficiency by analysis of cost factors will require consideration of achieved results in labor costs and in manufacturing and administrative overhead.

A change in cost per unit of direct labor or of applied overhead, recognizing changes in volume of production achieved from that on

which the cost estimates were based, will be an indication of performance efficiency.

The actual process of renegotiation entails the application of "judgment" on the part of the renegotiators as to what would be a reasonable amount of profit.

There is no yardstick on the percentage of profit to be allowed, and the contractor is renegotiated on the total of his renegotiable business—so that a long profit on one contract might be offset by a short profit, or a loss on other contracts.

As to whether such a device as renegotiation leads to a deterioration or an improvement in purchasing techniques, there is something to be said for both points of view.

A Government negotiator, placing a contract initially, might be less avid in making a close buy, with the assurance that excessive profits would be squeezed out in the renegotiation process.

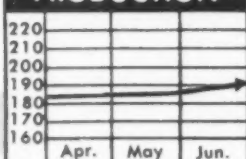
On the other hand, there is the view that the military purchasing agent, knowing that his procurements would be reviewed to determine whether his buying was close, would actually be stimulated to do a better job of buying initially.

HMR 703 - STATEMENT BY CONTRACTOR AS TO NON-APPLICABILITY OF THE RENEGOTIATION ACT OF 1942		REVENUE OFFICE FORM NO. 10-3001 JANUARY 1945
<p><b>EXPLANATION</b></p> <p>1. If the aggregate receipts or accruals (Sales, etc.) subject to the Renegotiation Act of 1942 were \$100,000 or more (see HMR 702) for a fiscal year, the contractor or subcontractor is subject to renegotiation and must file the "Standard Form of Contractor's Report." If the aggregate of receipts or accruals (Sales, etc.) for the fiscal year was less than \$100,000, the contractor or subcontractor is requested to file the Statement of Non-Applicability provided below. In a guide to determining whether this Statement may be used, reference should be made to the "Standard Form of Contractor's Report" (HMR 702) and the accompanying Instructions.</p> <p>2. After filing this Statement of Non-Applicability, additional renegotiable receipts or accruals applicable to the same fiscal year are realized is sufficient to bring the contractor's or subcontractor's total renegotiable receipts or accruals to \$100,000 or more, the "Standard Form of Contractor's Report" must be filed to replace this Statement.</p> <p>3. This Statement is to be filed in duplicate.</p>		
<p>TO: The Military Renegotiation Policy and Review Board The Pentagon, Washington 25, D. C.</p>		
<p>We acknowledge receipt of copies of the following: (1) Public Law 507 - 90th Congress, which contains the Renegotiation Act of 1942. (2) Section 401, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (3) Section 402, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (4) Section 403, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (5) Section 404, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (6) Section 405, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (7) Section 406, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (8) Section 407, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (9) Section 408, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (10) Section 409, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (11) Section 410, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (12) Section 411, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (13) Section 412, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (14) Section 413, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (15) Section 414, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (16) Section 415, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (17) Section 416, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (18) Section 417, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (19) Section 418, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. (20) Section 419, Public Law 785 - 90th Congress, which contains the Renegotiation Act of 1942. 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(251) Section 650, Public Law 785 - 9</p>		



# Where We Stand

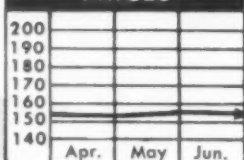
## PRODUCTION



Today's Business Trends As  
Reported In Current Statistics

	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN MONTH	% OF CHANGE IN YEAR
Industrial Production Index . . . . . 1935-39=100		193 (est).	188	174	+ 2.7	+ 9.8
Steel Production (Weekly) . . . . . 000 net tons		1,927	1,931	1,598	- 0.2	+20.5
Electric Power Production (Weekly) . . . . . mil KWH		5,632	5,872	5,018	- 4.1	+12.2
Bituminous Coal Production (Weekly) . . . . . 000 net tons		9,295	10,780	10,089	-14.0	- 7.9
Auto, Truck & Bus Output (Weekly) . . . . . units		139,061	139,800	91,955	- 0.5	+51.2
Petroleum Output (Weekly) . . . . . 000 bbls.		5,128	4,988	4,889	+ 2.8	+ 4.9
Engineering Construction (Weekly) . . . . . 000 \$		232,604	209,698	172,667	+10.9	+34.7

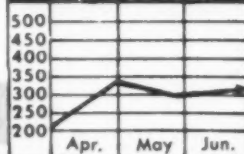
## PRICES



	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN MONTH	% OF CHANGE IN YEAR
All Commodities (BLS) . . . . . 1926=100		157.4	154.9	154.8	+ 1.6	+ 1.7
Farm Products . . . . . 1926=100		166.4	162.9	170.7	+ 2.1	- 2.5
Metals & Metal Products . . . . . 1926=100		172.6	170.1	166.1	+ 1.5	+ 3.9
Building Materials . . . . . 1926=100		200.0	194.7	191.9	+ 2.7	+ 4.2
Steel Billets (Pittsburgh) . . . . . net ton		\$53.00	\$53.00	\$52.00	0	+ 1.9
Steel Scrap, heavy melting, Pitts. . . . . ton		44.75	35.75	22.50	+25.2	+98.8
Copper, electrolytic . . . . . lb.		.22 1/2	.19 1/2	.16 1/2	+15.4	+30.3
Cotton, mid. 15/16" . . . . . lb.		.3467	.3329	.3375	+ 4.1	+ 2.7
Rubber (Rib-smoked sheets) . . . . . lb.		.28 1/2	.28 1/8	.16 1/4	+ 1.3	+75.3
Wheat, No. 2 . . . . . bu.		2.44 3/4	2.63 1/4	2.43 1/2	- 7.0	+ 0.5

## TRADE

(Dept. Store Sales)



	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN MONTH	% OF CHANGE IN YEAR
Dept. Store Sales Index (Fed. Res.) . . . . . 1935-39=100		302	300	288	+ 0.7	+ 4.8
Commercial Failures (Dun & Bradstreet) . no.		168	199	165	-15.5	+ 1.8
Freight Carloadings . . . . . cars		709,587	744,040	698,824	+ 1.5	+ 1.5

## FINANCE

	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN MONTH	% OF CHANGE IN YEAR
Stock Prices (Standard & Poor's) . . . . . 1926=100		152.0	145.2	110.6	+ 4.7	+37.4
Bank Clearings (New York) . . . . . mil \$		6,885	7,126	6,408	- 3.4	+ 7.4
Federal Reserve Credit . . . . . mil \$		18,143	17,978	19,956	+ 0.9	- 8.6
Currency in Circulation . . . . . mil \$		27,079	27,041	27,484	+ 0.1	- 1.5

# MANUFACTURERS' SALES, INVENTORIES AND NEW ORDERS

## Value of Manufacturers' Sales Seasonally Adjusted (Millions of Dollars)

All Manufacturing	17,643
Durable goods	7,445
Iron and steel	1,883
Nonferrous metals	488
Electrical machinery	720
General machinery (exc. elec.)	1,261
Motor vehicles & equipment	1,289
Transportation equipment (exc. motor vehicles)	426
Lumber and timber products	370
Furniture & finished lumber products	316
Stone, clay & glass products	332
Nondurable goods	10,198
Food and kindred products	2,942
Beverages	607
Tobacco products	266
Textile-mill products	943
Apparel	895
Leather and products	291
Paper and allied products	461
Printing and publishing	596
Chemicals and allied products	1,086
Petroleum and coal products	1,540
Rubber products	257

## Book Value of Manufacturers' Inventories Seasonally Adjusted (Millions of Dollars)

All Manufacturing	34,018
Durable goods	16,466
Iron and steel	3,654
Nonferrous metals	1,123
Electrical machinery	2,024
General machinery (exc. elec.)	3,628
Motor vehicles & equipment	2,201
Transportation equip. (except motor vehicles)	926
Lumber and timber products	737
Furniture & finished lumber products	795
Stone, clay & glass products	570
Nondurable goods	17,552
Food and kindred products	3,028
Beverages	1,114
Tobacco products	1,595
Textile-mill products	2,395
Apparel	1,363
Leather and products	595
Paper and allied products	911
Printing and publishing	616
Chemicals and allied products	2,346
Petroleum and coal products	2,527
Rubber products	648

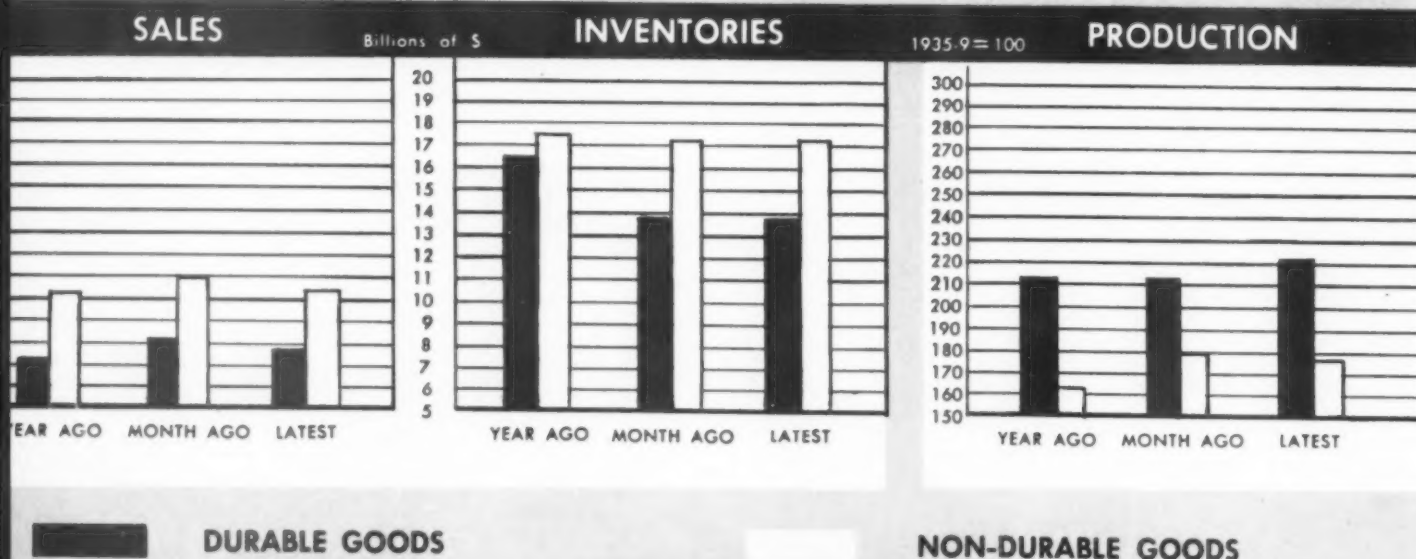
## Manufacturers' New Orders (Unadjusted)

All Manufacturing	15,968
Durable Goods	6,127
Non-Durable Goods	9,841

	1949					1950	
	April	Oct.	Nov.	Dec.	Feb.	March	April
All Manufacturing	17,643	18,866	16,824	17,341	17,956	19,144	18,302
Durable goods	7,445	7,878	6,561	7,041	7,572	8,127	7,930
Iron and steel	1,883	1,895	1,108	1,457	1,950	1,989	2,020
Nonferrous metals	488	579	500	512	595	572	559
Electrical machinery	720	802	756	767	788	885	825
General machinery (exc. elec.)	1,261	1,130	1,053	1,081	1,110	272	1,228
Motor vehicles & equipment	1,289	1,579	1,371	1,258	1,316	456	1,492
Transportation equipment (exc. motor vehicles)	426	365	359	410	391	395	338
Lumber and timber products	370	436	409	454	398	460	440
Furniture & finished lumber products	316	346	324	345	312	366	358
Stone, clay & glass products	332	388	354	393	384	389	359
Nondurable goods	10,198	10,988	10,263	10,300	10,384	11,017	10,372
Food and kindred products	2,942	2,989	2,890	2,834	2,872	3,010	2,899
Beverages	607	589	528	522	506	604	631
Tobacco products	266	285	256	280	272	286	255
Textile-mill products	943	1,164	1,089	1,133	1,073	1,091	1,022
Apparel	895	964	791	688	689	724	623
Leather and products	291	294	274	254	277	290	262
Paper and allied products	461	644	623	618	611	636	567
Printing and publishing	596	596	509	512	668	722	651
Chemicals and allied products	1,086	1,274	1,174	1,182	1,218	1,311	1,227
Petroleum and coal products	1,540	1,618	1,575	1,654	1,585	1,632	1,618
Rubber products	257	277	262	n.a.	n.a.	306	n.a.
All Manufacturing	34,018	31,059	30,737	30,494	31,140	31,103	31,210
Durable goods	16,466	14,266	13,870	13,646	13,869	13,878	13,954
Iron and steel	3,654	3,185	3,055	3,048	3,061	3,109	3,146
Nonferrous metals	1,123	1,035	1,023	1,028	985	977	988
Electrical machinery	2,024	1,648	1,603	1,568	1,605	1,593	1,609
General machinery (exc. elec.)	3,628	3,239	3,152	3,082	3,090	3,117	3,110
Motor vehicles & equipment	2,201	1,769	1,678	1,626	1,823	1,806	1,825
Transportation equip. (except motor vehicles)	926	869	839	809	691	677	654
Lumber and timber products	737	558	598	602	645	615	607
Furniture & finished lumber products	795	744	717	723	781	794	804
Stone, clay & glass products	570	506	492	474	494	495	506
Nondurable goods	17,552	16,794	16,867	16,848	17,271	17,225	17,257
Food and kindred products	3,028	2,806	2,955	2,983	3,309	3,220	3,254
Beverages	1,114	1,124	1,099	1,082	1,137	1,159	1,140
Tobacco products	1,595	1,728	1,715	1,697	1,661	1,673	1,694
Textile-mill products	2,395	2,198	2,218	2,254	2,331	2,338	2,329
Apparel	1,363	1,332	1,332	1,357	1,485	1,524	1,510
Leather and products	595	614	611	616	611	616	645
Paper and allied products	911	756	739	737	777	775	776
Printing and publishing	616	561	559	589	612	606	618
Chemicals and allied products	2,346	2,228	2,222	2,223	2,151	2,112	2,128
Petroleum and coal products	2,527	2,497	2,507	2,472	2,240	2,246	2,203
Rubber products	648	562	537	n.a.	n.a.	595	n.a.
All Manufacturing	15,968				18,241	20,228	18,320
Durable Goods	6,127				7,852	9,075	8,380
Non-Durable Goods	9,841				10,389	11,153	9,941

n.a.—not available

## SALES, INVENTORIES AND INDUSTRIAL PRODUCTION



# Straws in the Trade Wind

● Secretary of Commerce Charles Sawyer criticized current attacks on "big business" in a speech at Harvard University Business School recently. "Those who claim that competition does not exist between giant firms do not know what they are talking about," he said. "The competition that goes on between large business organizations," he added, "is as real as the struggle between contending armies in war. . . . At the moment, the rulings, the judicial decisions, and the thinking upon this subject are so conflicting and confusing that a restudy, and perhaps a restatement of policy, in this field is in order."

● A new synthetic rubber which can be manufactured without the use of scarce styrene has been developed by the Phillips Petroleum Co. in cooperation with the Office of Rubber Reserve. The new rubber, made from butadiene, is of a quality suitable for tires, it was announced. Previous synthetics made with butadiene only had not proved suitable for this purpose. Butadiene is in good supply at present, while there is a shortage of styrene because of a scarcity of benzene, from which it is made.

● An earlier estimate of the decline in plant and equipment spending during the first nine months of 1950 has been revised downward by the Department of Commerce and the Securities Exchange Commission. The two agencies, which a few months ago predicted that such expenditures would drop 11% below those of last year, have now set the figure at 6%. It was also estimated that total outlays for the entire year will be substantially higher than the earlier expectation of \$16,100,000,000. New plant and equipment expenditures in 1949 were \$18,200,000,000.

● The housing boom reached new highs in May, according to latest Government figures. A new record for starts — 140,000 — was made during the month, going far over the previous top mark of 126,000 set in April of this year. Building in May was 50% over the same month in 1949. During the first five months of the year, 538,000 new homes were started. Last year, this figure was not reached until July. Some estimates are now being made that between 1,200,000 and 1,250,000 homes will be erected this year. Last year's record was 1,025,100.

● Production of motor vehicles in the United States reached 3,381,616 at mid-June, according to Ward's Automotive Reports, as a record pace was maintained. In the same period last year, production reached a total of 2,748,827.

● The volume of United States exports continued to decline in April, according to the Bureau of the Census.

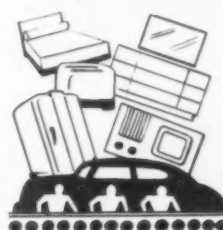
They dropped \$59,800,000 from the previous month to a total of \$858,500,000. Imports also fell off for the month, declining \$88,100,000 to \$571,100,000. Finished manufactures showing the largest falling off in exports were industrial machinery and electrical machinery and apparatus.

● Exports of iron and steel products in 1949 were 4,685,462 tons, a slight gain over 1948 but the second lowest in the past decade, it was revealed by American Iron and Steel Institute on the basis of Department of Commerce reports. Despite comparatively small shipments of iron and steel to foreign countries last year, total steel pipe exports were 834,183 tons, a record.

● An increase of "several million square feet in the production of softwood plywood" is expected during July, according to Lawrence Ottinger, president of the United States Plywood Corporation. Mr. Ottinger said that the rise in production is intended to partially meet an anticipated shortage of the product this summer.

● The average employee's real hourly wages will double in about 30 years if production per manhour continues to rise at the same average rate as in the past, according to a recent analysis by the Committee for Economic Development. "Success in raising real wages is in the main a matter of increasing output per manhour," the report said. "It is also a matter of keeping people steadily at work". The outlook is good, it added, but "future advances will not be rapid unless we have many important scientific discoveries, good management in industry and wise public policies."

● Consumers plan to spend more in 1950 for new homes, motor cars and television sets than ever before, the Federal Reserve Board has reported. Other durable goods should share in these record expenditures, according to the survey on which the report is based.

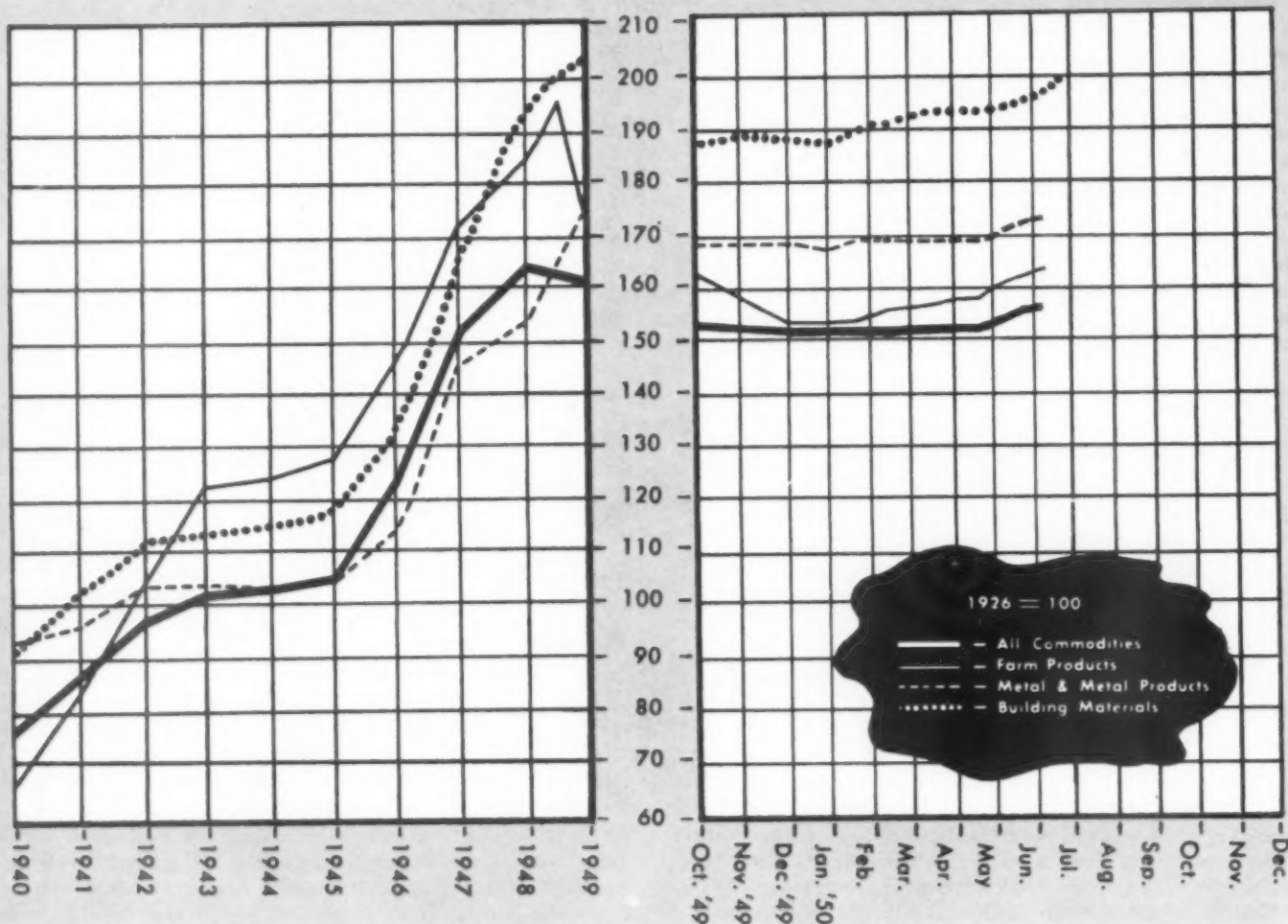


"The extent to which these plans are carried out, however," the board has stated, "will depend considerably on what happens to jobs, incomes and prices, availability of goods and credit, and the general domestic and international situation." Consumers were said to be optimistic at the beginning of the year about the general outlook and their own economic prospects, but somewhat more cautious than at the same time in 1949.

● Government experts have been reported as somewhat optimistic about employment prospects in the country, in contrast to previous fears that unemployment might reach 5,000,000 this summer. They are said to feel that unemployment will not go over the 3,600,000 mark in July, in spite of the influx of June graduates into the labor force.



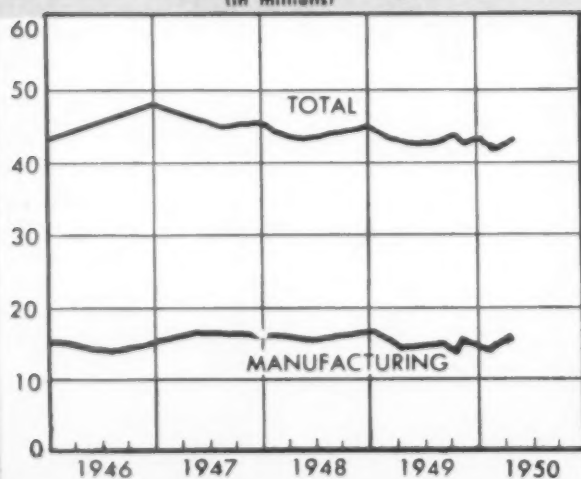
## The Price Picture



## Employment & Earnings

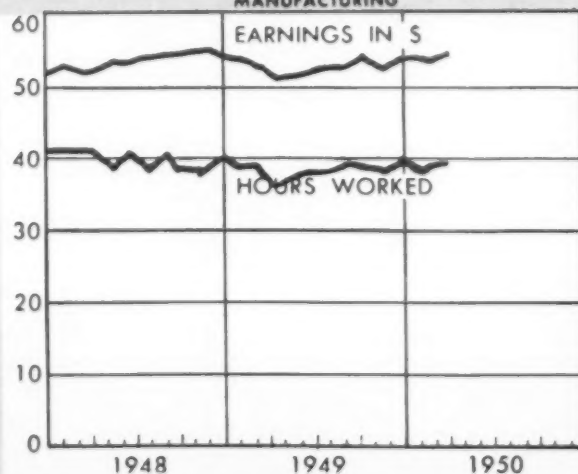
NON-AGRICULTURAL EMPLOYMENT

(in millions)



AVERAGE WEEKLY EARNINGS AND HOURS

MANUFACTURING



SOURCE: U.S. DEPT. OF LABOR

## The Pulse of Business

While the pundits pondered and experts exclaimed over the somewhat unexpected semi-inflationary period that has developed, everyone else concerned appeared to be taking it in stride and with a cautious eye on the future.

Sentiment at the recent convention of the National Association of Purchasing Agents reflected a calm, realistic approach that has led more and more of the analysts to count on industrial purchasing men as a reliable source of economic information and interpretation.

The report of the N.A.P.A. Business Survey Committee, as usual, received close attention. Chairman R. C. Swanton reported that business was "good", would probably stay that way through June, and would slow down in July as widespread vacation shutdowns occurred. He revealed that more than half the committee members expected business to continue good until the end of the year; 23% will go along with that expectation only to the end of the third quarter; and 17% prefer not to make any predictions beyond July. A little less than a tenth were content only to say June would be good. As for inventory policy—"maintaining stocks required for known production schedules, within the lead time of those schedules, is still the conservative policy." In other words, there is little speculation, in spite of the "boomlet" that has developed.

### Corcoran Asks Lower Prices

President T. A. Corcoran drew wide comment and praise for his forthright analysis of the problems that face us now. "It seems to me," he said, "that automobile production at a rate of 9,500,000 units per year, or 50% higher than in 1949, and housing construction at a rate of 1,250,000 starts a year, or 22% higher than last year, are probably more than we can digest as a regular diet, particularly at prices pretty close to double prewar. Prices are too high to support

the tremendous productive capacity developed during World War II. We must in some way bring them down if we are to prevent another disaster similar to the one starting late in 1929."

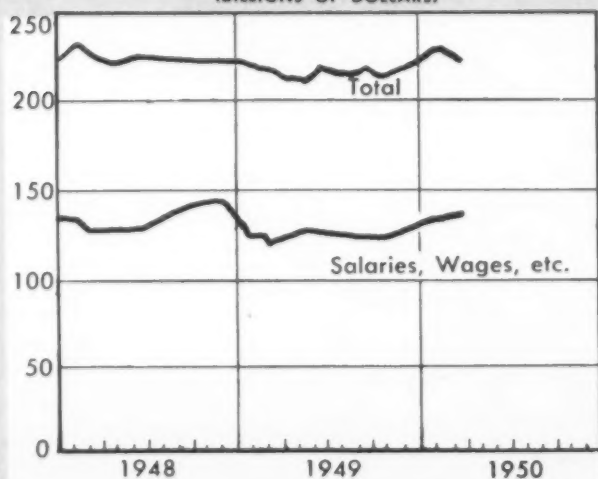
"Oh What A Beautiful Day" might be the theme song for the upturn in business that occurred at the beginning of the year and has held on until now, according to Dr. Edwin G. Nourse, one-time chairman of the President's Council of Economic Advisers. A lot of people would have us believe we have discovered the secret of perpetual motion, he said, following the "sentimental rebound from last year's recession", but may we now be "near the top of a parabolic curve?" He expressed concern over the high rate of credit now existing and pointed out that "liquidation of credit in non-inflationary times (which are bound to come) hurts". He asked his listeners to ponder the effects of the new pension commitments and wage escalator clauses that have entered labor agreements. Dr. Nourse saw some way out of the maze of rising costs, expanded credit, and deficit government spending—a "managerially skillful disinflation...to bring prices where they could move along a relatively stable line."

### When Will Demand Slacken?

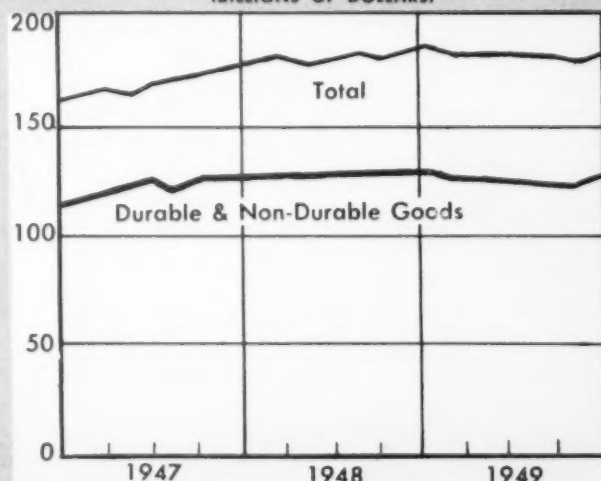
Meanwhile, the prospects for the coming six months looked good. Housing, automobiles, new plant and equipment expenditures are all going at a higher pace than had been anticipated several months ago. Consumers plans for the purchase of durable goods are reported by the Federal Reserve Board to be greater than the records established last year. Always, however, one must emphasize, as the current Cleveland Trust Bulletin does, "confidence in business prospects over the next several months should not obscure the fact that business revival has been financed partly by a large increase in borrowing by the public... Some time the supply of automobiles, houses and other durables will catch up with the backlog of demand—though not all at the same moment." That slackening of demand and reduction of purchases on credit may begin this year, but it is hardly expected to come with any great suddenness or volume.

## Personal Income & Expenditures

**PERSONAL INCOME**  
(BILLIONS OF DOLLARS)

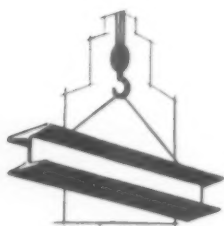


**PERSONAL CONSUMPTION EXPENDITURES**  
(BILLIONS OF DOLLARS)



# Materials & Markets

## STEEL



The tenth straight week of record production by the steel industry had almost been completed as this was written. Steelmaking furnaces were scheduled to be operating at 101.2% of capacity, equivalent to 1,929,100 tons of ingots and steel for castings. The approximate total looked for at the end of the ten weeks was 19,230,000 tons of steel, a high unmatched in any other similar period in the history of the country.

The tight supply situation now existing in steel is generally expected to last at least into the third quarter. In a review of the steel outlook at Cleveland, N.A.P.A. members, however, saw supply catching up with demand by the end of the year, and perhaps before that in the case of heavy products, plates, structural steel, and bars. But for the present, the pressure is still on and there are growing reports of deals in imported steel, conversion, and "gray" markets.

Following the rise in prices announced by a number of small producers on sheet and strip, there was some apprehension that a general wave of price increases was imminent. So far it has not materialized and most indications are that it will not get past "corrective" changes in individual items, in the words of Charles M. White, president of Republic Steel Corp. The scrap market has begun to weaken since its long upward gallop of the past few months, and any further decline will help check rising steel costs. Fred G. Syburg, chairman of N.A.P.A. steel committee reported at Cleveland that the price trend is "definitely upward" but said that integrated mills are trying to hold the line.

## NON-FERROUS METALS

Heavy industrial buying and governmental stockpiling kept the non-ferrous price level high during the month. Although it was indicated at Cleveland that some purchasing men expect to see a slackening in demand this summer and a definite end to the metals pinch by the end of the year, the immediate picture at least for copper and zinc, gave no indication of such a development.

Stockpiling, a strike in Chile, and large consumer demand probably will keep copper prices up at the present high level of 22½¢ a pound, which is not far from the postwar high reached in August, 1948. Producer-refiner stocks of copper were brought down in May to their lowest levels in many years, according to figures of the Copper Institute, reflecting stockpiling

and heavy demand. Refined stocks at the end of May totaled 51,020 tons, as compared to 57,028 tons in April, and 101,070 tons in January of this year. Deliveries to domestic fabricators during the month were 113,837 tons or a daily average of 3,672 tons, as compared with 101,729 tons in April. These latter figures do not include the amounts taken for stockpiling.

It appeared at this writing that the suspension of the 2¢ per pound tariff on foreign copper would be allowed to lapse, as scheduled, on June 30, without Congress taking any action. This would presumably mean a further rise in the price of imported copper.

The Munitions Board told an advisory committee of the non-ferrous metals industry recently that it intends to continue its purchases of zinc as necessary to the defense program, despite the inability of industrial users to get all they need. The Government has been under some criticism for enlarging its purchases of the metal at a time when industrial demand was booming. The chairman of the board pointed out, however, that the national security is considered first before the adverse effect buying or not buying might have on a particular market. Zinc has already had several price rises, the last one before this was written bringing it to 15¢ a pound. Altogether it has risen 5½¢ a pound this year. A new rise is not unexpected in view of the current squeeze, and there have been reports of premiums being paid for small lots of imported zinc.

Beginning July 1, the Munitions Board announced, it will cut its purchases of lead substantially, since the objective for that metal has been reached. The board was asked by members of the advisory committee to bring about the reductions in a manner that would not bring a violent reaction in the market. The board said this would be considered, but would not commit itself specifically to any method of slowing down its buying. Supply of lead is good, with imports increasing, and the current price of 12¢ a pound appears to be in a considerably weaker position than that of zinc or copper.

## RUBBER



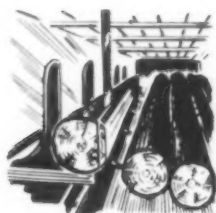
Erratic movements in the rubber market during the month gave rise to hopes that the violent upward surge in prices was about over. A variety of factors have been put forth as the basis for expecting the runaway price gallop to end, and perhaps a decline set in, despite the fact that supplies are still tight and demand is at



record levels in the United States and growing in other parts of the world. One of the reasons is the recent statement by the U. S. Department of State, deploring the huge increase in prices and warning that it would "create anxiety as to the future well-being of natural rubber producing areas. It could lead to a decreased demand for natural rubber and to higher prices for rubber products." There had been an impression in some quarters that the department had not looked with disfavor on rising rubber prices, inasmuch as they were supposed to be helping dissipate the dollar shortage that we have pledged ourselves to work for as a matter of national policy.

The "ace-in-the-hole" this country is supposed to hold in the rubber game, a powerful synthetic rubber industry, was gradually being brought into play to meet the critical situation. During the month, the Reconstruction Finance Corporation, Office of Rubber Reserve, announced that it was stepping up synthetic production, and planned to have output up to 35,000 tons a month. Output of synthetic in January was 19,000 tons. The Department of Commerce has reported a "continued shift" by tire makers from natural rubber to synthetic in recent months, and a growing use of reclaim. Consumption of synthetic in the rubber industry is said to be running at about 30,000 tons a month.

## LUMBER



Demand for lumber continued strong, and opinion expressed at the N.A.P.A. convention indicated that it would stay that way for the balance of the year. Prices are still very high, but there were reports of a certain amount of resistance, particularly in retail yards, that had kept them firm for the past two weeks. Some builders

are said to be very reluctant to commit themselves any further at present prices, and to be concentrating on meeting what contracts they have now and holding off on further action until fall, when the "wild" conditions of the present market are expected to be stabilized. Ultimately, as in most industries, it is the consumer who will decide whether tremendous production at high prices can be absorbed without a collapse. So far, home building and home sales have kept merrily to their record pace, and there appears little belief that the bottom will suddenly drop out of the home market. Trade quarters hold it more likely that demand will slow down gradually, perhaps at the end of this year.

Millwork prices have been described as "running wild" due to high lumber prices and soaring labor costs.

Prices have gone up from 15 to 20% since last winter and are still rising. Plywood prices went up again on June 1, but are thought to have reached their peak. Supply is good and expected to get even better.

## PAPER AND PAPER PRODUCTS

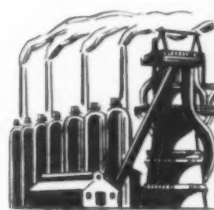
Paper prices during the third quarter are expected to rise in practically all categories as the result of continued heavy demand and tight supply, and the announced increases in wood pulp prices. Another factor putting upward pressure on prices is the new wage contracts that the mills are scheduled to discuss in the coming months.

Prospects as outlined at the N.A.P.A. convention show a continued high demand and scarce supply of kraft into the coming months. Heavy buying of multiwall shipping sacks is reported. Prices are expected to rise if demand continues at its present pace. Production is being stepped up on boxboard, and both supply and demand are good. Demand is high for fine paper and possible price rises on the basis of increased labor costs are anticipated. Newsprint is very scarce, to the point of bringing about a return of the gray market. Price pressure is upward.

## PRICE CHANGES

Increases "sufficient only to cover increases in manufacturing costs" have been announced in the price of spherical roller bearings, spherical roller thrust bearings, and spherical roller bearing pillow blocks, by SKF Industries, Inc. The price rise amounts to 5% . . . Wheeling Steel Corporation has increased prices for its galvanized ware averaging 7 1/2 % because of the rise in zinc prices . . . A reduction of 10% in distribution transformers, announced several months ago, has been rescinded by Westinghouse Electric Corporation. A 15% increase in copper prices, and other cost increases are said to be responsible . . . Rising prices of raw cotton have led to price increases in a number of fabrics

including woven tickings, bed sheets, shirting flannels, denims, coverts, and some carded twills . . . Westvaco Chemical Division, Food Machinery & Chemical Corp. plans to raise prices on technical and USP carbon tetrachloride and carbon tetrachloride base fire extinguisher fluid effective July 1 . . .



U. S. Industrial Chemicals, a leading producer, has raised the price of ethyl alcohol 4¢ a gallon, for the third price increase in a year. The new price is 39¢ a gallon . . . Continued rising costs of wools have forced James Lees and Sons Company to raise the prices of wool carpets by 5%, effective July 17.

## NATURAL GAS STRONG CONTENDER IN FUEL MARKET

The traditional contest between coal and oil for dominance of the fuel market is being turned into a three-cornered race by a relatively new but potentially powerful contender — natural gas.

The growing importance of natural gas as a fuel is shown in the figures of its sales, its growth in percentage of total energy consumed in the United States, and the almost daily newspaper reports of the expansion of the industry and its pipelines to all parts of the country, particularly in the heavily populated east. As shown in the accompanying chart, sales have been climbing steadily during the past five years in all important categories—residential, commercial and industrial. In 1949, residential gas sales advance 7.0%, commercial 17.6%, and industrial 9.0%. Since the first part of the century natural gas has been supplying more and more of the power used in this country. In 1909, it supplied 3.7% of the total BTU consumed; 4.2% in 1919; 8.2% in 1929; 11.7% in 1939; 13.5% in 1947; and an estimated 19.2% in 1949. Actual or planned extensions of existing pipelines into areas not previously served by natural gas are being announced regularly, and by 1952 it is expected that every state in the union, with the exception of those in the Pacific Northwest will be a part of the fuel's market. Perhaps the most important of recent developments of this type was the application by Texas Eastern Transmission Corp. for permission to build a new 791-mile pipeline to supply New England with natural gas. If approved, the line would be delivering gas in time for the winter heating season of 1951-52, according to Texas Eastern.

Almost as impressive testimony to the increasing significance of natural gas is the respect accorded it by its competition. A Standard Oil Co. (New Jersey) economist is reported as estimating that 50,000 barrels daily of light fuel oils and 75,000 barrels daily of residuals will be displaced in east coast markets by the end of 1952 by new supplies of natural gas. Stanley C. Hope, president of the Esso Standard Oil Co. recently warned the heating oil and burner industry to avoid a "feeling of complacency" toward the growth of natural gas heating, because it presented a real challenge. The coal industry has not made any specific estimates of how natural gas is affecting it, but an im-

portant producer recently issued a long and detailed analysis of "Why Natural Gas Will Not Continue Unlimited Expansion" which in effect recognized the strong competition now offered by gas.

In the middle of a gas "boom", some observers, both neutral and otherwise, have raised questions about the future. One of the most persistent is, how long can the industry go without raising its rates, considering rising costs and the heavy capital outlay necessary to keep extending pipelines. Coal and oil already enjoy an advantage in this respect, and the competitive position of natural gas would suffer by a further widening of the gap. Another concerns the reserves of natural gas. The Federal Power Commission requires that a ratio of 20 to 1 be maintained between proved reserves and annual delivery before it will approve of large investments in transmission lines. The current ratio is satisfactory, (about 30 to 1 as shown in the chart on reserves) but in view of the rate of discovery and the increase in usage, some quarters have expressed the opinion that the ratio will get smaller and smaller.

Meanwhile, however, the natural gas industry is progressing steadily, consolidating its competitive position, and, according to all reports, facing the future with a good deal of confidence.

### ANNUAL ESTIMATES OF NATURAL GAS RESERVES

(Millions of Cubic Feet)

Year	Net Production During Year	Estimated Proved Reserves As End Of Year	Increase Over Previous Year
1945	.....	147,789,367	.....
1946	4,942,617	160,575,901	12,786,535
1947	5,629,811	165,926,914	5,351,013
1948	6,007,628	173,869,340	7,942,426
1949	6,245,041	180,381,344	6,512,004

### NATURAL GAS SALES 1945-1949

(Millions of Cubic Feet)

Year	Total	Residential	Commercial	Industrial	Other
1945	2,155,894	551,982	174,428	1,343,890	85,594
1946	3,194,948	606,128	183,368	1,354,560	50,892
1947	2,515,250	740,569	224,295	1,467,503	82,880
1948	2,894,650	832,205	280,431	1,668,437	113,577
1949	3,075,295	913,100	298,962	1,756,909	106,324

All figures from the American Gas Association.

# Unscramble Your Job

Most jobs can become hashed up unless you organize them for personal efficiency

"Do It Now" sounds good, but violates the first principle of good work habits

The most formidable jobs can be broken up into step-by-step accomplishment

● By Donald A. Laird

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A noted psychologist gives some practical advice on how to get more work done, more easily, in spite of the complexities and problems of modern business.

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MARGUERITE was clever with figures, and specialized in traffic rate work. She was skillful with a slide rule, and was the most proficient traffic rate clerk the firm had discovered.

As word of her ability spread, others began to drop in to make use of her skill. Her phone rang for quick information from her slide rule. She would be two-thirds through a complicated computation when the phone would interrupt her calculation so that she would have to start again at scratch.

The office manager noticed that she was becoming irritable, getting behind in her work and losing confidence. He first suspected she was not having enough sleep, or might be troubled with secret worries, so he asked the company nurse to have a talk with her.

The cause of her decline, of course, was the interruptions. They were a great help to others, but a handicap and irritation to her. Her job had become a hash, not through any fault of her own, but because she was unusually useful.

The job was unscrambled by detailing a general typist to the desk beside Marguerite's. The typist's work did not require intense concentration. She could answer the telephone and serve as information clerk to protect Marguerite from distractions.

Many jobs are a hash to start with, and need to be organized. Housework can be a headache if it is done on a catch-as-catch-can basis without organization to de-hash it. The situation can be just as bad in a business office, where theoretically there is a pride in systematic organization.

## Office Hash

The private secretary's job probably has the greatest possibilities for becoming a mix-up. Surveys show that secretaries have some 871 different duties. The fewest duties for any one secretary is 15, the highest 479. The average private secretary has 132 different tasks, ranging from typing letters and answering the telephone to such intermittent tasks as paying the boss's traffic fines and buying his family birthday presents.

132 different jobs can ruin personal efficiency unless they are organized in step with sound psychological principles. Even two tasks can make a worker dizzy, as Marguerite learned—and so did her office manager.

The executive himself is not immune from the same hazard. Consider the purchasing agent, with the multiplicity of his responsibilities and duties, the variety of products and problems with which he must deal, all subject to frequent and unpredictable interruptions from his colleagues in the plant and office and from the salesmen clamoring for an interview.

Fortunately, there are some sound and tested psychological principles of organizing work—de-hashing a job—to improve personal efficiency. Here are a few of them:

Group similar tasks together so that specialized work can be done in one sitting. The "Do It Now!" slogan violates this principle. The efficient worker does not "do it now" unless there is enough of it to keep him busy for an hour or longer. He lets similar tasks accumulate, unless there is some emergency requiring immediate attention.

The private secretary, for instance, should accumulate dictation until there is at least an hour's typing ahead of her. Then do all the typing. After the typing is done, proofread it all. It is inefficient to type one letter, then proofread it, then sign it, then fold and insert it, and then start the next letter. That makes the work a hash. It is more efficient to stick to one kind of task until a stopping place is reached. Signing, folding, and inserting of letters require little concentration and can be left for periods when fatigue or interruptions would lower efficiency for tasks that require more alertness.

Save up outgoing telephone calls, and make them all together in one sitting.

The executive who is considerate enough to organize his own work to make such a schedule possible for his secretary is doing himself a service at the same time, for it permits him to apply the same principle to his own schedule.

## Capitalize on Variety

A second principle for work organization is to *change tasks* about every two hours. This lessens boredom and fatigue. After a couple of hours at the same task, most workers can truthfully say, "I'm not tired, but I am tired of *this*."



This is particularly true in factory work that is brought along on a conveyor in a steady flow. A continuous supply of repetitive work gives high mechanical efficiency, but makes workers less efficient. Human beings work best when there is a change of tempo or task every hour or two. The endless supply of work makes the job seem harder, and is frequently the cause of unrest and otherwise unexplainable labor troubles.

When the tempo of work is determined by a mechanical device that grinds on unchanging through the day, a change of task can still be provided. Some factories do this by allowing workers to swap jobs every hour or two. In a laundry, for instance, girls feed the mangle one hour, then switch to folding from the mangle for the next hour. When switching jobs is not possible, some benefits can be had by working for a while sitting down, then standing for a while.

However obtained, work should be organized so that there are several shifts of tasks throughout the day. Lack of change makes people inefficient and grumpy. Too many changes have the same result.

#### Change of Pace

Make these shifts so that *hard and easy tasks are alternated*. When the task has to be the same all day long, the effect of alternating hard and easy periods can be had by changing pace. Set a fast pace the first hour, then take an easier pace the second hour, going back to the brisker tempo the third hour.

Music is sometimes used in factories for pacing to alternate brisk and more leisurely gaits. A half-hour of two-steps is followed by a half-hour of silence, then a half-hour of waltzes followed by another period of no music. Continuous music, or the same type of music, is not as helpful as brief spells that set a change in pace.

The old-time "efficiency expert" or systems engineer failed to take into consideration this human need for changing pace. He tried to get top pace all the time. It can't be done.

#### Hard Jobs First

Organize your work also so that *you start on the difficult or disliked task first*, and have it out of the way. A hard or unpleasant task postponed and looming up ahead, seems all the harder and more unpleasant—sometimes out of all pro-

portion—and reduces efficiency on other tasks throughout the period of "reprieve". The housewife haunted by the job of making beds should make the beds first and thereby reduce the drudgery of her day. In case there is no particularly difficult or disliked task to start with, then start with a brisk pace.

There is one exception to this rule—the learner. Anyone learning a new job should start with the easier tasks.

#### Milestones of Accomplishment

Work should be planned to have *definite stopping places* where one can feel that something has been accomplished and completed. The demoralized feeling one has on moving a vanload of household goods into a new house is an illustration of what happens when work suddenly piles up all in a heap. Classifying and organizing your work into a series of related tasks helps to overcome this. A few stopping places are particularly needed in routine repetitive work.

When a big pile of work is doled out all at one time, it causes discouragement and jitters. There are complaints that management has started a speed-up when a factory department gives workers a whole barrelful of parts to assemble. There are fewer complaints, and work is actually speeded-up, when only a basketful of parts is given out at a time.

#### The Whole and Its Parts

Break big or repetitive jobs into *smaller chunks*. Keep a big enough chunk on hand to serve as an incentive to keep going, but not so large as to be discouraging. We apply this to our grass mowing. There is a lot of mowing in our 10-acre lawn of lush blue grass, and it is disheartening when we face the task of trying to mow it all at once. But by picking out an hour's quota at a time, the job is made easier. At the end of each hour's section there is a feeling of satisfaction over finishing that quota, instead of dismay at the 9 acres still ahead.

I used this rule recently to ease the distasteful task of counting the number of questions in a book. By taking each chapter as a unit, or chunk, it gave a feeling of progress as each chapter was counted, and also made it easier to check on accuracy.

In one sales office, envelopes were being addressed by hand to telephone subscribers across the coun-

try. This was unskilled, temporary work, and high wages were paid, but few girls stayed with the job longer than two or three days. The boss was a slave driver, they said. Investigation showed that each girl was given a thick telephone directory and a stack of several thousand envelopes each morning and the alleged slave driver did not see her the rest of the day.

To change the system, the telephone directories were cut apart. Each girl was given 5 sheets (10 pages) at a time, and only one box of 500 envelopes. This procedure broke the repetitive work into smaller chunks which gave a feeling of making headway as each batch was finished. The girls no longer quit the job after a couple of days, and output increased despite the additional "lost time" of walking for new supplies.

#### Step by Step

Tackle the big job, or the day's work, *step by step*.

In learning a job, it should be explained and tackled as a whole job, but a learned repetitive job is done more efficiently when it is broken down into hunks that give a stopping place every hour or so. This stopping place is not so much needed for a breather to recuperate from physical fatigue, as it is to give a feeling that one is making headway.

People want to feel they are making headway. That has probably been true for a thousand generations. The conveyor, which is only one generation old, can't change human nature, but it can be organized to work with human nature. The mechanical savings made by the conveyor system have been paid for many times over in the cost of labor unrest. The pot of gold at its end has been as elusive as the gold at the end of the rainbow.

The conveyor and assembly line are here to stay. So is labor unrest, until work is organized along the conveyor so that people feel they are making headway. The conveyor has the psychological merit of grouping similar tasks together. From then on, it has psychological demerits, though clever and understanding management can change many of these merits.

The accelerated tempo and heavier burden of executive management responsibility are also here to stay, but they need not result in hashed-up jobs if proper thought and attention are given to organization of the work load.

# How CALIFORNIA selected a new STATE PURCHASING AGENT

**By George W. Aljian**

Director of Purchases and Packaging  
California & Hawaiian Sugar Refining Corp.  
San Francisco

THE recent appointment of Lawrence E. Hobart to the position of Purchasing Agent of the State of California has been acclaimed throughout the West. It was a well-deserved appointment of a man well known in purchasing circles for many years, but it was also an appointment which had to be earned by Civil Service examination, conducted by the California State Personnel Board.

The first phase of the search for the P.A. was to properly publicize the examination, and this was accomplished for the most part by the co-operation of the Purchasing Agents' Associations of Los Angeles and Northern California. The assistance of several purchasing agents—governmental and industrial—was enlisted in supplying problem type material. This material was then edited by the State Personnel Board staff and constituted the "essay" part of the examination. The balance of the examination was constructed by their staff with technical advice from the State Director of Finance and the then State Purchasing Agent.

Under the California Civil Service Act, all positions, whether to be filled by promotion or not, must be filled by examination. The general policy regarding the question of whether or not examinations shall be purely promotional or open is set forth in the Government Code.

If it appears that there are an adequate number of well-qualified candidates within the service, examinations are scheduled on a promotional basis only. An open examination is usually scheduled along with the promotional when, in the opinion of the State Personnel Board and the agency, more competitors or more competition is needed. A promotional list must be used before appointments may be

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More and more, those responsible for the selection and appointment of purchasing officers for state and local government are taking advantage of the knowledge and assistance that are available to them through the Purchasing Agents Associations. Recent examples of this constructive cooperation include the States of Michigan and California, and the cities of Cleveland, O., Erie, Pa., Worcester, Mass., and New Haven, Conn. This detailed report of how it was done in California is of significant interest to purchasing man and public officials alike.

The author, who participated as an advisor in this project, is a past president of the National Association of Purchasing Agents and is currently serving as chairman of the N.A.P.A. Educational Committee.

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made from the open list resulting from such an examination.

The usual procedure of permitting State employees to compete promotionally was dispensed with, however, in the examination for State Purchasing Agent. Because

firms and other governmental jurisdictions could take the examination on the same basis as employees of the Division of Purchases. In other words, no promotional list was established to take precedence over the list of open eligibles.

## **Facts About the Position**

According to the announcement by the State Personnel Board, the State Purchasing Agent plans and schedules purchasing operations; directs the work of the staff and evaluates staff performance; works with State agencies toward the standardization of requirements; analyzes market conditions; approves contracts and price agreements; reviews and awards unusually difficult purchases; establishes procedures and records; gives overall direction to the operation of central stores; maintains effective relations with vendors; devises methods for investigating the sources of supply and for obtaining competitive quotations; coordinates the inspection and testing of commodities; consults with and advises State agencies regarding purchasing problems and requirements; prepares budget estimates for the Purchasing Division; dictates correspondence and prepares reports; and does other work as required.

## **Eligibility Requirements**

Applicants for this position, in addition to being U. S. citizens and residents of California for at least one year, had to fulfill certain qualifications. For instance, each applicant had to have five years of super-



**LAWRENCE E. HOBART**

was selected from a field of 134 applicants to become State Purchasing Agent of California, responsible for the expenditure of some sixty million dollars of public funds per year.

of the importance of the position, the State Personnel Board, upon the recommendation of the Department of Finance, declared the examination non-promotional. This meant that purchasing agents for private

visory experience in large-scale purchasing of a wide variety of commodities, and education equivalent to graduation from college.

#### Scope of the Examination

Out of 134 applicants, 43 met all qualifications and were thus accepted for the written examination, which contributed to 50% of the total appraisal. This examination was based on:

1. Knowledge of purchasing principles and practices.
2. Knowledge of office methods and practices.
3. Knowledge of market conditions and current prices.
4. Knowledge of traffic procedure.
5. Knowledge of the law of contracts.
6. Knowledge of the principles of organization and business management, and of personnel management and supervision.

In the written examination the candidates were first given one hour in which to answer six problem type questions. A typical example follows:

A requisition from a hospital lists a cleaning compound to be purchased in large quantities. What would be the most desirable method to convey

to sellers a clear and accurate picture of the required item? Explain why.

Another problem involved a situation in which the using agency desired that a particular brand of engineer's transit be purchased even though the bid for it was considerably higher than that for another transit of similar quality.

The next three hours were devoted to a group of 200 objective-type, true-false, and multiple-choice questions covering the six above-mentioned subjects. Examples of each are detailed below.

#### Traffic Procedures:

The quotation '½ of 1' appearing in the freight classification rules means that shipments are charged one-half the first-class rate. (Answer: True)

#### Law of Contracts:

A quotation of price given by the seller to the buyer is not a binding offer to sell, but is only an invitation for an order of offer to buy, even though the party quoting actually owns and has the goods and makes the quotation in person. (Answer: True)

#### Purchasing Principles and Practices

Provisions for securing competition among vendors should be a major element in public purchasing procedure and should be dispensed with only when

- (1) buying from vendors of established integrity.
  - (2) the required commodity is not patented.
  - (3) the commodity can be obtained only from vendors at distant points.
  - (4) an emergency requires that an order be placed with the nearest available source of supply.
  - (5) the requisitioning department is located at some distance from the purchasing department. (Answer: 4)
- An advantage to the purchasing department of the use of a price agreement contract with a vendor is that
- (1) price fluctuation is eliminated.
  - (2) inspection and testing are required at less frequent intervals.
  - (3) separate purchase negotiations are not required for each requisition.
  - (4) the vendor commits himself to regular delivery dates.
  - (5) both the vendor and the purchasing agent are agreed on the exact quantity to be purchased. (Answer: 3)

#### Office Practices, and Principles of Organization and Management:

Of the following kinds of overhead expense frequently found in a large organization, the one in which there is the least variation with increases or decreases in the volume of work is the amount of

(Please turn to page 213)



## We Have A New Neighbor

JUST two blocks to the east of Conover-Mast's New York offices, fronting on the East River, rises the magnificent new United Nations Headquarters building. This impressive structure is more than just another landmark on the famous metropolitan skyline; it is the "Capitol of the World."

With this change in our surroundings, the Welcome folder handed to business visitors in our reception room has been redesigned. The cover features a conventionalized pictorial map of the midtown section of the "town between the rivers", showing the location of our offices in relation to the railway terminals, the venerable "El", Times Square, and the Empire State, Chrysler, and Radio City towers, plus our new and distinguished neighbor.

Inside pages list key personnel on our six publications and Book Division, also general officers of the company, including our new purchasing agent, Miss Marion Bordenga.

Groundwork is proceeding apace on the Chrysler Building addition, one block to the west, and our map may soon have to be redrawn. New York is going to be a nice town, if they ever get it finished.



# The "Why and How" of CENTRAL STORES

● By Charles W. Hayes

Supervisor of Purchases, Emory University



C. W. Hayes

Probably the most important of all reasons for setting up a stores department covering any group of related commodities is to be able to control and operate a workable, useful "inventory policy" as a tool of management. Inventory policy may be defined as "the general practice of any particular time concerning the ratio between the rate of consumption of a commodity (actual and potential) and the amount of stock on hand and on order."

Commercial purchasing departments usually define their inventory policy as it concerns any particular commodity on the basis of "days coverage". Inventory policy shifts from long coverage to short coverage due to changes in economic conditions in general and particularly as such conditions affect specific commodity groups.

Inventory policy is controlled ultimately by the amount of money available for investment in inventory. This often is a determining

factor in whether or not a stores system is set up at all. If no money is available for investment in inventory sufficient to run a good stores operation, it is rather useless to try to set up a system under such conditions.

It is important in considering inventory policy to understand that there is not *one* inventory policy but *several*, or indeed a great many inventory policies. It is absurd to exercise the same control over items of very small unit cost as we would over equipment items, or supply items of great use and rather high unit cost. Approximately 90% of the money tied up in any inventory operation covers only about 10% of the commodities, which are very important. The other ninety articles out of one hundred that are of low unit cost could be bought on a standard package method even though in such cases coverage for a year or even longer would be achieved.

In the second place, in determining what inventory policy should be for a specific commodity, we must consider how easy it is to procure each item and how quickly delivery can be secured. There is not much point in stocking heavily on rather expensive items that can be secured almost at a moment's notice from several sources. If you are in a relatively isolated location, away from the warehouse of good vendors, you will of necessity have to carry more items and larger quantities in inventory than the buyer located in a large metropolitan area.

The relative importance of the article to your institution is also a primary consideration. If you are wholly dependent upon coal for heating and for the operation of your steam plant, your inventory policy as it concerns coal will not make too much sense in terms of "days coverage" and in terms of

trying to guard against a fluctuating market. It will make a great deal of sense, however, that you are assuring your institution of always having coal on hand and not having to shut down due to the fact that the miners are taking another "holiday". For that reason, regardless of other considerations, it is necessary that you stock heavily on coal, particularly when the times are approaching that the miners may go on strike. At other times you can adopt a more conservative policy and try to get the best buys possible.

Let us consider now a second objective to be attained by the organization of stores departments. A good organization of stores departments is necessary for proper *fiscal* and *physical* controls of materials. Unless someone has carefully thought through the problems of operating a stores department and carefully organized for the proper control, a storeroom is apt to be a liability rather than an asset. If the procedures have been worked out properly and are continually being reviewed by intelligent and informed people, however, you should achieve a great deal in the way of proper management controls for the benefit not only of the purchasing department but of the institution as a whole.

Responsibility for continuous adequate stocks of commonly used items is centered in the procurement department. This responsibility is infinitely easier to handle when storerooms are organized and administered by the procurement department. In such cases, if emergency purchases must be made because of inadequate stores procedures, the purchasing agent has

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Address at the 29th annual convention of the National Association of Educational Buyers, Houston, Texas, May 4, 1950.

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only himself to blame and can quickly take the steps to correct such a situation. Remedial action, of course, is much more difficult when the requisitions are coming from some other individual responsible to some other department.

One of the most important objectives that can be achieved by the organization of adequate stores departments is *standardization*. Every purchasing agent is constantly striving to standardize the use of commodities in his institution so that the variety will be sufficient to accomplish the purposes required in all phases, but yet so that *only* such variety as is necessary will be stocked. It is obviously uneconomical to stock several different brands of the same commodity. Also, departments will generally accept items issued from stores as "stock items" with less complaint than if they requisition some particular brand and it is switched by the purchasing agent when he places the order directly for the using department.

The outstanding reason, really, for having a stores department as well as for carrying on many of the other procurement functions, is to take advantage of the *cash savings* to be achieved. In a stores department this is achieved by buying in large quantities and issuing in smaller quantities to using departments. A properly organized stores department enables us to take advantage of quantity discounts in terms of the inventory policy that we have set for each commodity. (Quantity discount brackets often have hidden dangers, but we are assuming that you would not order a ten year supply of an item merely to achieve an additional 10% discount.) A good stores department with proper controls enables us to concentrate several related items into one request for quotation with the understanding that the order is to be placed as a unit with the best bidder. We are also able to concentrate purchases with selected vendors and by such a procedure are able to achieve a preferred status in marketing channels.

The bane of most purchasing agents' existence is numerous small orders. Small orders are extremely costly. It takes as much time and personnel to handle the negotiations for placing, delivery, and payment of an order for \$1.50 as it does for one of a much larger sum. We cannot get around the necessary paper work unless we ruin our



Proper storage facilities and competent personnel are essential for successful operation of a central stores department.

system, and must use essentially the same procedures for the small orders, with the possible exception of eliminating requests for quotations. Vendors simply aren't as interested in small orders as they are in large ones. They often lose money handling such orders and consider them of little consequence.

A well administered stores department will go far in elimination of *rush or emergency orders*. Rush orders may be for rather substantial sums. However, there is not a great deal of opportunity to shop for prices. We usually must follow the technique of locating the first source available and then placing an order. There is a great deal of time consumed by purchasing department personnel and vendors' personnel in telephoning lists, checking stocks, phoning back and trying to get the information quickly so that a rush order may be placed. Also, attempts made to rush delivery of an order often create confusion with the vendor's routines and actually create additional delays. There is, too, much more chance for errors from verbal negotiations over the telephone than from written quotations and orders placed in writing.

A great advantage in having a well organized and administered stores system is that it is fairly easy to eliminate, or at least curtail, many *departmental* storerooms

"controlled" by using departments. We can never get away entirely from small departmental stocks of such items as letterheads, rubber bands, paper clips, and items of that nature. In the science departments it is probably much better to allow them to maintain working inventories of commonly used items. There are dangers, however, in departmental storerooms in that there is no *consistent* inventory policy. Each department administers their "stock" as they see fit, and very often such administration is relegated to a student assistant or a secretary. Standardization efforts are largely defeated, too, when departments run their own small stores operations, and much more money is tied up in aggregate with less adequate protection for future needs.

Increased obsolescence is very likely in such situations where the stocking, issuing, and using up of supplies is done on a more or less hit-or-miss basis. Central control combats the obsolescence factor. Even if standards are changed so that a superior product is purchased, we don't issue it until the old product is used up. With centralized control of stores we can also often arrange for a return of merchandise for credit to the vendor before obsolescence has become an appreciable factor. The mere fact that trained personnel is



continually watching the turnover of stock should go far in achieving efficient operations.

Let us consider briefly the *type* of storerooms which a university may have.

All schools would find it a good policy to maintain some kind of office supply storeroom, if for no other reason than to standardize and to save money by quantity purchasing. Maintenance supplies primarily for the Building and Grounds Department make up another category of commodities that should be controlled by a good stores set-up for the benefit of this department and for incidental service to instructional or research departments who may require some of these items in small quantities.

Some schools find it feasible to operate a central storeroom for scientific supplies and apparatus. In our particular institution we operate these on a departmental basis and have fairly good stocks of these items in only four locations: the Chemistry Department, Biochemistry Department, Hospital Storeroom, and Physics Department. For other departments we try to order as needed from local houses for small orders and in our annual bid list for larger quantities of items which can definitely be determined in advance for the year. Good local scientific supply houses simplify your problem considerably. They can carry a much larger inventory than would be feasible to maintain in your own institution. The savings to be achieved by massive purchases in this field are considerable, but are not as large as in some other areas. You must guard, also, against deterioration of certain chemicals and must remember that many of them offer definite fire hazards and would cause considerable increase in your insurance rates if you consistently stored such chemicals in quantity.

Many institutions operate centralized food storerooms. This is a special operation in itself and is often administered directly by a director of food services. In any event, any of your food operations, whether centralized or not, must maintain some sort of stocks of basic canned goods, cereals, bagged products such as flour and sugar, sauces, cooking oils, and possibly quick freeze and deep freeze storage of meats and vegetables.

A special case for those institutions operating hospitals is involved in hospital supplies and drugs. The inventory of a 300 bed hospital

cannot be much under \$100,000 at any one time in order to provide the kind of protection the patients may need. If you have an infirmary, you have a much lesser problem, although several hundred or even several thousand dollars may be tied up in drugs and consumable supplies that will be required for its operation.

Many schools operate a central furniture and office equipment storeroom or carry it under the same controls as office supplies. Such items should be standardized and should be closely administered by the purchasing agent. Otherwise you will find that your institution has a hodge-podge of mis-matched furniture and you will lose all flexibility in shifting from one department to another as needs change.

Let us consider now, centralized control of stores operations. Whether the purchasing agent himself is primarily responsible for the stores operation or whether it is the direct responsibility of some other individual, it must be recognized that he is vitally concerned with its success. A purchasing agent can accomplish a good purchasing job much easier by using the aids of properly administered stores facilities and records. He can more easily achieve for his institution quality control, quantity control and standardization.

Another factor in the control of a stores operation that should be considered is the *physical location* of the storeroom or storerooms. You may have one very large warehouse storing all commodities; in such cases you must have a rather elaborate delivery system from this storeroom to all points of use. You may control the stores operation almost as well by having the various categories of commodities stored in several places, nearest their point of greatest use. Industry has begun to use this technique. The control can be achieved regardless of the physical place of storage if the system is properly set up and if the records are properly administered.

The problems of storing a great diversity of items in one large warehouse can become very difficult indeed. If it takes too long to get items from the storeroom, you are immediately giving your departments excuses for building up departmental storerooms, the very purpose that you wished to defeat by setting up a central stores service. Control can be achieved through having the inventory *records* and

the purchasing records in a central place.

In order to operate a department after it has been organized, we must think first of the personnel required to make it function. You must have good people keeping your records—people who know the commodities thoroughly, who are figure conscious and who are not mechanical workers, but who bring unusual trends (of increased or declining use) to the attention of the superiors. In the second place, you must have expert people as storeskeepers. They, too, must know the commodities thoroughly, and it is extremely helpful if they are familiar with the *uses* of the commodities so that they can suggest substitutions to people requesting such commodities and so that they can give good advice as to quantities required, quality needed, and such other purchasing factors. Storeskeepers must be honest. They have thousands of dollars worth of commodities under their care. They must be good housekeepers to protect the investment. They must be accurate, efficient workers.

In order to properly operate the stores department, you must have adequate physical storage space and arrangements for proper warehousing, receiving and issuing. It is foolish to store some commodities in unheated buildings. If the commodities cannot be correctly stored, they will often be covered up and will become obsolete through overaging. The materials must be accessible for inventory and for use, and the space and facilities must be adequate for varying types of commodities requiring quite different physical environments. Fire and flood hazards must be guarded against. For most commodities you will need shelf or bin storage with bulk storage in reserve. It is obvious that not any old barn will make a good storeroom, although it might be quite acceptable for the storage of some items.

In order to operate an inventory system effectively it is necessary to develop a *stores catalog*. Items should be catalogued by number to facilitate requisitioning, issuing, and record posting. The description should be adequate and clear, conforming to generally accepted trade descriptions. Provision should be made in the number system so that additions can be made in the proper commodity groups, and the catalog should be kept up to date for the benefit of the using departments with periodic revisions being issued



from the inventory section. The catalogs should show standard package quantities, minimum issue quantities, and unit price to the departments.

In order to operate effectively well worked out methods of requisitioning from stores and issuing to the department must be available. Such procedures should be kept as simple as possible to eliminate unnecessary red tape. The using departments will cooperate better with simple procedures and they will not tend to load up in "departmental" storerooms, if they can secure their needed supplies conveniently and promptly. The purchasing department should issue rules and regulations as to the following:

(1) Who is authorized to requisition.

(2) Prior approval required of Dean, Administrative officer, etc. (Some items are more closely controlled than others and perhaps for equipment items in your institution it will be necessary to secure approval from some other individual beyond the ordinary requisitioning personnel.)

(3) Instructions should be given

as to whether a particular item can be picked up or whether delivery by storeroom personnel is obligatory.

(4) Some indication as to promptness of delivery should be shown.

(5) Necessity of securing a properly signed receipt.

(6) Billing procedures (crediting proper stores account and debiting departmental budgets) should be understood by all departments.

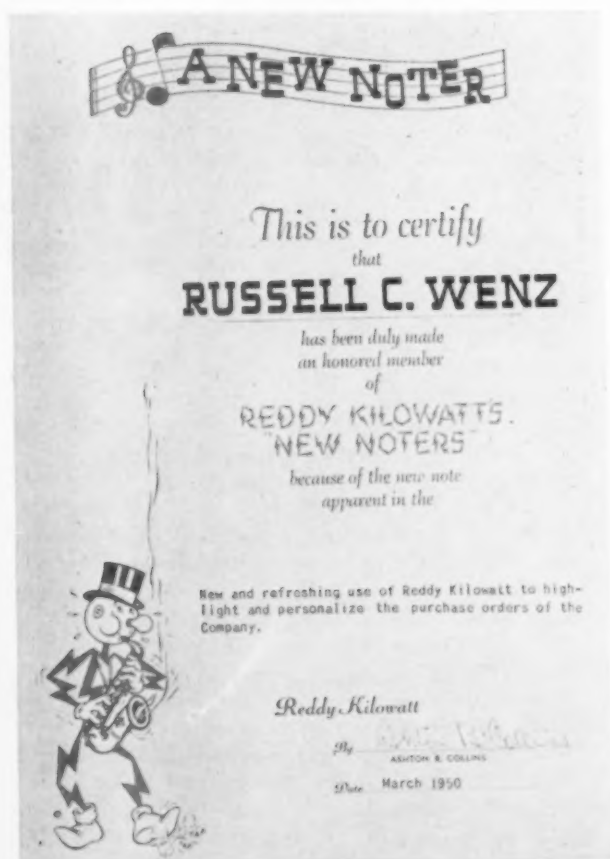
(7) Definite policy as to cash sales. It has been my experience that most schools prohibit cash sales from stores, and I would certainly advise you to discourage them if you cannot prohibit them entirely. It may be that in your institution you can stock those items in the bookstore which are most requested as cash sales items. It must be remembered that you are not running the storeroom for the benefit of saving the faculty members money, personally, but that you are running it for the benefit of the institution. Cash sales and normal stores inventory procedures do not mix well.

After we have the material on

the record cards and after we have it in the storeroom, how are we going to be sure that our physical inventory and our book inventory continue to correspond at any given time? You may work out a system of bin tags or shelf tags wherein the storeskeeper makes his original count and shows all disbursements and additions as the material is taken from the bin or from the shelf. In such cases, it is necessary also to have a list of items in bulk storage, and when they are removed to shelf storage proper notations should be made on this list as well as on the bin tag. I would recommend spot checking continuously by the supervisor of the stores operation. There are several ways of coordinating the physical count with perpetual inventory records. Do not let errors accumulate. If the discrepancy is caught promptly it can usually be corrected easily. Some companies ask the storeskeeper to note his balance in inventory on the same document that he uses to charge out the goods. If there is a different balance on the inventory card, it can be caught

(Please turn to page 217)

## New Look in Purchase Orders Brings Recognition to P. A.



**A NEW NOTER**

This is to certify  
that  
**RUSSELL C. WENZ**  
has been duly made  
an honored member  
of  
**REDDY KILOWATTS  
NEW NOTERS**  
because of the new note  
apparent in the

New and refreshing use of Reddy Kilowatt to highlight and personalize the purchase orders of the Company.

Reddy Kilowatt

By *ASHTON & COLLINS*  
Date March 1950

THE alert purchasing agent can find many an opportunity to contribute effectively to the public relations program of his company and his industry.

"Reddy Kilowatt", the sprightly little gent with electric outlet plugs for ears and a light bulb for a nose, is widely known as the symbol of the private utility companies. R. C. Wenz, General Purchasing Agent of the Duquesne Light Company, Pittsburgh, conceived the idea of showing Reddy on his purchase orders, as shown below, reminding vendors of the importance of the private utility business as a customer.

For this "new and refreshing use of Reddy Kilowatt to highlight and personalize the purchase orders of the company", Mr. Wenz has been awarded the prized distinction and certificate of a "New Noter".

<b>THIS IS YOUR ORDER</b>		<b>DUQUESNE LIGHT COMPANY 1</b>	
for material or equipment for Duquesne Light Company's new 60,000 Power Station		425 BIRTH AVENUE PITTSBURGH 12, PENNSYLVANIA C/O DRAYO CORPORATION, MACHINERY DIVISION AGENT	
<b>MORE ELECTRIC POWER FOR GROWING PITTSBURGH</b>		<b>PURCHASE ORDER NO. 11846A</b> CONSTRUCTION	
PROCESSED	DATE	SHIPMENT DUE	
REQUISITION NUMBER	TO BE USED FOR	DESCRIPTION	
CHARGE	PRICE	PRICE	

*"Diamonds are a girl's best friend," sings Lorelei, in the current Broadway musical version of "Gentlemen Prefer Blondes." In a commercial paraphrase of this classic observation, a prominent industrialist says:*

## Salesmen are the Buyer's Best Friend



**By Chester H. Lang**

Vice President and Manager of Sales  
Apparatus Department  
General Electric Company

**D**AY-TO-DAY, in a business way, the purchasing agent's best friend is the salesman. At least, he can be; for of course we have to distinguish clearly between the sheep and the goats.

The salesman has always been epitomized by that marvelous, mythical character who was able to sell refrigerators to Eskimos—the old wandering drummer—the confidence man—the fast talker who was interested only in a fast buck.

We'd be kidding ourselves to think that all of these breezy characters have disappeared from the scene. But in the field of industrial selling, we can safely say that there has been a definite trend toward better trained, more ethical salesmen. Today's industrial salesman very honestly sees himself not simply as a salesman, but as a buyer's counsel.

We haven't yet reached the mil-

lenium in salesmanship. We still have some fakes and high pressure characters, as well as lazy people who don't belong in this hard working profession. The main body of industrial salesmen, however, are trained and competent business advisers, whose honest concern is to see that their customers are served faithfully over a long period of time.

Now let's step over to the other side of the desk, and look at the modern purchasing agent. Here too, as in the field of selling, important changes have occurred in the very concept of the job. Your modern purchasing agent, by and large, is a mature, far-sighted businessman. He must be pretty well versed in all aspects of his company's business—engineering, production, marketing, administration, legal policy.

This is as it should be. It was almost inevitable that the purchasing job should grow to these proportions, because the purchasing agent has such a marvelous vantage point in the business. Just the routine papers coming across his desk depict, hour by hour, what is going on in the many separate structures of the company.

It is commonly said that the accountants hold this kind of a vantage point, but they run a kind of *post-mortem* operation. They can tell you all about the mess you're in—but only after you're in it. The purchasing agent, on the other hand, can observe these cold facts while they're still hot and while something can still be done about them. The purchasing job is inherently big, and purchasing agents are growing big to fill it.

As evidence of this, let's look at some of the ways in which purchas-

ing agents, like salesmen, have matured in the past decade or two.

First of all, we've seen a gradual disappearance of sales resistance for its own sake. The modern purchasing agent is just too smart to have a closed mind. He evaluates a sales story carefully, but his general approach is positive. His job is to speed, not impede, the flow of goods.

In the same way, the concept of purchasing has advanced from "nickel nursing" to a more management-minded level, keenly aware of the opportunities in a "Spend to Save" philosophy, and with the initiative to recommend investment in money-saving new equipment. This broader, more progressive viewpoint has now become the accepted approach, according to our salesmen, and that is an important step forward.

Since there's a new type of salesman and a new type of buyer, perhaps we ought to do some new thinking on the relationship between the two. There may be possibilities in this new situation which haven't been fully capitalized.

First of all, let's train our salesmen and buyers for cooperation instead of battle.

All the literature of sales training is couched in terms of a struggle. We give him "sales ammunition". We tell him he's out on "the firing line". A sales meeting, more often than not, is closely akin to the pep rally before the big game, where, after some cheer leading by the student body, the big boss tells his team to go out there and fight-fight-fight!

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Address at the March 1950 meeting of the Akron Purchasing Agents Association.

Granted, a certain amount of this is always going to be necessary as an antidote to human inertia. But business is growing up now. In the industrial field at least, sales management might seriously study whether salesmen could not move goods a great deal faster if they had a fundamentally different training, with emphasis on more complete product information, more familiarity with customers' problems, and better organization of work to enable the salesman to give his customers quicker service.

As to the other side of the desk, it seems evident that over the years, purchasing agents have been taught to be cautious, reserved, perhaps a little on the defensive. After all, if the salesmen have been pumped full of this militant holly-golly, it seems natural that purchasing agents should be trained to fight fire with fire—or more likely, with a wet blanket.

But the time has come when the purchasing agent, from the very beginning of his training, should see the modern salesman as a reliable business adviser. His course could include specific case histories of good buyer-seller relations, developed over the years, that have resulted in profit and satisfaction for both companies involved. If we can thus train our salesmen and buyers for cooperation, rather than battle, who knows what new possibilities may be tapped for greater effectiveness in business?

Secondly, let's give our buyers and salesmen more authority and autonomy. We don't want them to be like Russian diplomats, who can't give a simple "yes" or "no" without first checking Moscow. What buyer likes to deal with a salesman who has to check with the factory or home office for every detail? Naturally, a salesman doesn't know all the answers. Nevertheless, a good salesman must have the knowledge and authority to make commitments, and to know that his company will stand behind him.

Similarly, a good buyer must have adequate authority. How can he move swiftly and efficiently if he has to get a dozen approvals for every two-bit purchase? But given the authority, and the confidence that their companies will back them up, salesmen and purchasing agents can act swiftly and decisively.

A third suggestion: let's take the long-term view of buying and selling. After all, business is here to stay for a while. We have our ups and downs, our inflations and disinflations. But most of the profes-

sional fortune tellers feel that, if businessmen will be sensible, progressive, hard working, and far-sighted, we can look forward to a period of relative stability.

Most people will agree that the purchasing agent today is a much more reliable guide to the future than the so-called economists. He has to be. He lays money on the line every time he makes a prediction. With his finger on the pulse-beat of industry, and with a vital concern in the patient's health, he is a *practising* economist. This has its perils as well as its advantages.

Because he is so sensitive to the daily swings of the market, the purchasing agent may sometimes become short-sighted. While he is following every dip in the chart, he could overlook the larger economies that can be attained through a steady, well organized flow of supplies which can be counted on regardless of minor jiggles in the price index. In special situations, hand-to-mouth purchasing may be temporarily justified. But in the long run, a company can make greater progress if it buys according to a planned purchasing policy, carefully suited to its marketing and production needs.

In selling, too, we'll have to take the long-term view. Sales management these days is resorting to a rather hysterical use of temporary sales stimulants—clearance sales, special deals, high pressure techniques—that actually do business more harm than good in the long run. We must do our selling with the customer's long range business health in mind.

Fourth, let's encourage our salesmen and buyers to put all the cards on the table when they deal with each other. I do not imply that there is anything dishonest in present buyer-seller relationships. But let's encourage them to trust each other more fully, and to share information that will help both of them do a better job. The buyer, for example, should tell the salesman specifically what he wants, and when he wants it—without too much air in the schedule. If the salesman is supplying material to fit into a larger project, why not let him in on the project? He may save you some money.

Fifth suggestion: let's make greater use of the resources of *both* companies in a transaction. The buyer and the salesman, after all, are not independent agents. They are each the representative of an entire company of experts. It's the job of the P.A. and the salesman to

bring these teams together, for mutual profit.

General Electric's purchasing department has developed a sound technique for doing this, in connection with our larger purchases. A meeting is arranged at the selected vendor's plant. Usually we are represented by an engineer, a tool designer, a production-planning man, a cost analyst, and a purchasing agent. The supplier's staff which planned the job completes this conference group. Every detail is carefully reviewed, with a complete exchange of ideas. In many cases, better ways of tooling and manufacturing are found, with consequent cost reduction and profit to the manufacturer. Says Harry Erlicher, "We have found that cooperative effort of this type pays handsome dividends."

Finally, let's encourage *creative* buying and selling. Purchasing agents are busy people; so are salesmen. They have to find short cuts, if they are to get their work done. So a certain amount of routine buying and selling is necessary. Nevertheless, the way must always be kept open for the formation of new and profitable relationships.

Salesmen must be given extra credit for "cracking" new accounts. If they have the initiative to dream up new uses for the product they sell, and open up new markets, their extra initiative must be rewarded.

Likewise, there must be extra recognition for the buyer who tracks down cost-saving ideas and opens the way for new suppliers. Maybe he'll take a flyer once in a while, on a completely new development. But it's not enough for management to *allow* the purchasing agent to try new suppliers and new developments. Management must actually encourage creative purchasing.

Manufacturers' sales exceed 188 billion dollars annually, of which 126 billion dollars, or about two-thirds of every sales dollar, is expended for materials and services supplied by other enterprises. In a very real sense, it is the purchasing agent, controlling well over half of business expenditures, who regulates the flow of money and goods in American industry. He is the hard core of common sense within our economy, still determined to obtain a dollar in value for every dollar spent—to invest in the machines and services that pay off, that create more wealth than they originally cost. In his quiet professional way, he has a great deal to do with the shaping of American destiny.



# The Purchasing Function in Management Organization

● By William R. Spriegel

Associate Dean, and  
Chairman, Department of Management  
College of Business Administration  
The University of Texas

The purchasing department exists to provide  
a service function

Purchasing officers have both line and staff  
responsibilities

Basic principles of organization that must be  
observed in a successful enterprise

**W**HY should the purchasing agent be interested in organization? He operates in an organization, and should understand organizational principles to be effective.

The purchasing department is a service department, and should recognize the limitations of a staff department to avoid unnecessary conflicts. I have sometimes detected a greater amount of friction between the purchasing departments and other departments than is good for the organization as a whole.

This friction is largely caused by: other departments' not understanding the functions of the purchasing department; or by the purchasing department's not understanding the responsibilities and needs of the other departments; or by basic defects in organizational structure.

In terms of basic organizational principles, a purchasing agent should know: (a) the primary and operating fundamental of organization; (b) the different types of organization, with their advantages and disadvantages; and (c) how to combine various basic types of organization in order to solve a specific organizational problem.

The purchasing agent is a business man. Every man in business should know these fundamentals of organization, and how they affect the enterprise as a whole and his department in particular. These fundamentals were originally formulated with a private business in

mind, but they are just as applicable to a purchasing department in an educational institution. In many respects, the people with whom the educational buyer works are even more sensitive to them than are persons in industry.

## Principles of Organization

The basic fundamentals are four in number. They comprise:

1. *Regard for the aim of the enterprise.* It is all too easy for the members of a large team to forget the basic cause for being of the endeavor in the first place. This is true even of an educational institution. In a commercial organization, this definition of purpose should go beyond the general aim of profitable operation to include the specific services for which the company exists. For an educational institution at the university level, my personal belief is that it should teach its students effectively, with the end in view that they can take their places in the world as worthwhile citizens, be assisted in their life's vocations, and be enabled to live more fruitfully.

2. *The establishment of definite lines of supervision.* Every person in an organization has a right to know to whom and for what he is responsible. These lines of supervision include the purchasing agent as a staff officer to serve the entire line.

3. *The placing of fixed responsibility.* Such definite responsibility placed upon each member of the team gives him a feeling of worthwhileness and the "will to do". It also enables his supervisors to eval-



Dean W. R. Spriegel

uate his performance and to give full credit where it is due.

4. *Regard for the personal equation.* This is one of the characteristics of modern management. It has potentialities for transforming the entire work relationship. As purchasing agents, let us remember that we have a special responsibility for recognizing and maintaining the dignity of men. Ours is a service for others. Let us render it in such a manner that we are encouraging others to go out and do their jobs better.

In order to implement these primary fundamentals, we must next consider the operating fundamentals. These are also more likely to

Address given at the 29th annual convention of The National Association of Educational Buyers, Houston, Texas, May 4, 1950.

be remembered if presented in tabular form, namely:

1. *An adequate system* must be developed to make effective the lines of supervision, and to carry out the procedures designed to carry out the objective. Beware of system for the sake of system; it tends to become red tape. The proper amount of system requires balance. Too much system reduces efficiency, whereas proper system eliminates wasted effort and promotes efficiency.

2. *Adequate records* are necessary. There can be no effective system nor evaluation of performance in the absence of adequate records. Records, like systems, are not ends in themselves, but aids in achieving the desired end. They should be checked from time to time to see if they are serving a useful purpose, or whether two or more records can not be combined into one to get the same result. The cost of compiling and maintaining records should be checked against the value received from their use.

3. *Proper operating rules and regulations* should grow out of the operating situation. This is a wonderful place to practice consultative supervision. Rules and regulations are more readily obeyed if the reasons for their being are explained.

4. *Dynamic leadership* is essential to every enterprise. No amount of system, procedures, operational manuals, organization charts, or any other device can take the place of a dynamic leader. Such a leader, even with poor organizational structure, will accomplish more than an uninspiring leader with a theoretically perfect structure. In many colleges and universities, the business trained purchasing agent is in a peculiarly advantageous position to demonstrate his personal leadership in an important way, thereby adding materially to the effective service of his department and to the success of the institution.

#### Types of Organization

In applying these principles to the administration and operation of an enterprise, there are four basic types of organization:

1. *Line organization* (also referred to as *military* or *scalar* organization) presupposes complete authority at the top of the hierarchy, with tapering degrees of authority—alike in kind but more limited in scope—at the various supervisory levels, working down from the top, each deriving its authority from the next higher level. This type of or-

ganization is practically unknown in the total administration of a college or university, but it is often the type used within the non-academic divisions, such as the purchasing department. All too often, some purchasing agents try to use this type of relationship with the instructional staff, with sad results for all concerned.

2. *Functional organization*, as developed by Frederick W. Taylor, the classic exponent of efficiency, is that type of organization in which the activities of an enterprise are analyzed and specialists are placed in charge of each function. These specialists bring their special skills right down to the work level. Some workers may report to as many as eight different specialists for different phases of their activities. This organizational structure is no longer in use, but many of its principles have been included in the line and staff organization which we now have in most businesses and institutions.

3. *Line and Staff organization* adds the staff advisor to the line organization to secure most of the advantages of the line and functional types of organization, with relatively few of their disadvantages. There are, however, certain advantages and disadvantages that are inherent in the line and staff organization itself. Most large businesses and most universities are line and staff enterprises in organizational terminology. In the educational field, the instructional division—being the main instrument for carrying out the objective—is the line; the non-academic division is in a staff relationship to the instructional division.

The line and staff has the following strong characteristics:

a. It retains most of the advantages of the line type of authority and relatively few of its disadvantages.

b. It is more flexible than the line alone.

c. It gives the organization the service of specialists.

d. It uses the principle of the division of labor.

e. It not only adds strong units to the line, but strengthens the units that are already there.

The line and staff arrangement also has some inherent disadvantages, namely:

a. Confusion of line orders with staff advice.

b. Since staff officers are not directly responsible for results, they may at times advise somewhat promiscuously and carelessly. The psy-

chology of the situation may be wrong. It may also give the line officer an excuse for failures.

c. Knowledge acquired by the staff may die with the staff, and not be used by the line.

d. The line may lean too much on the staff and do too little thinking on its own.

e. The staff may be bothersome to the line and then be relegated to an inferior, unimportant status. On the other hand, it may assume line authority that does not actually belong to it.

A fourth type of organization that should be mentioned here is the *Committee organization*, in which decisions are reached by joint consultation among divisions. It is not a separate type, as such, but is often used at various levels in organization.

#### Staff Functions

It would be well to clarify, in part at least, the nature and function of the staff. The line represents the authority of man; the staff represents the authority of ideas. It is the function of the staff to counsel; of the line, to command. Staff service has three phases: informative, advisory, and supervisory.

The staff is purely an auxiliary service. Its function is to be informative and advisory with respect to both plans and their execution. The staff department may be assigned any one or all of the functions of advice, coordination, service, or control. The purchasing department, for example, may properly advise in connection with certain contemplated purchases for the educational departments; it may coordinate certain activities, such as suggesting that two departments share an expensive piece of equipment rather than purchasing two, each one to be idle most of the time; it may perform services such as the purchase of required items in the most economical manner; it may control certain expenditures to see that they come within a departmental budget.

Complete segregation of staff duties from line duties is seldom found. The staff leader has an advisory capacity with respect to the line; but he also has line authority with respect to his own division. The staff service of collection counsel is present in any organization. Staff functions are in a constant state of flux, with advancing human knowledge. Staff service began with individual staff services, and

(Please turn to page 216)

# Small Business' Share of the Military Procurement Dollar

No satisfactory measure of size or of equity has yet been defined

Economic considerations are the basic factor in any procurement policy

Small business has actually fared well in competing for government orders

By Edward E. Oppenheim

THE realities of a post-war economy are rapidly and painfully becoming apparent to business, both large and small. A speedy conversion of industry's wartime productive capacity has dissipated in large part the first inflationary flood of a consumer demand swollen by war's scarcities and bolstered by war-enforced consumer savings. The stepped-up productive tempo of the war years continues; only the tune has changed. Now, with the whetted edge of the consumer appetite dulled by the increasing availability of goods and the consequent depletion of consumer savings, it is inevitable that industry should reappraise the worth of Uncle Sam as a customer.

In time of boom, the Government is industry's least favored customer. Heterogeneous, complicated, and sometimes esoteric restrictions on the expenditure of Federal funds accounted for much of Uncle Sam's boom-time unpopularity. Add to these considerations an assortment of profit-recapture devices (renegotiation, Vinson-Trammell Act, redetermination, repricing), and the result is a channeling of industry's sales efforts away from Government and into more lucrative and more easily tapped commercial outlets.

As long as there was more than enough economic pie for all, the political issues of small business versus big business virtually were forgotten in the race for profits. It was only when the lush days became less lush and the problem of sales overshadowed the problem of production, that the first post-war screams of the lobbies of marginal

business and overexpanded small business were heard. Uncle Sam reverted to his status as a favored customer. A stage in the transition era had ended.

## *The Comptroller General Interprets*

In a capitalistic democracy it is axiomatic that a fair proportion of the Government's business should go to small business. Congress legislated this axiom into a wishful statutory generality. In doing so, Congress omitted from its enactments criteria by which the subjective terms "fair proportion" and "small business" could be defined. But at least one small business group did not consider this a fatal defect. On the contrary, attorneys for this small business group represented to the Government that since the law states that a fair proportion of the awards made by the Armed Services should go to small business, and since the law also states that in advertised procurements award shall be made to the low bidder "price and other factors considered", the relative size of a business was a factor to be considered. The Comptroller General's ruling on this matter, in terms firm and clear, quickly dispelled any further exploitation of this novel legal contention.

Awards were made in an advertised procurement involving 700,000 pairs of shoes having an approximate cost of \$3,850,000. Bids were received from 23 bidders. Three of these bidders were low bidders for the total procurement. Not one of these three low bidders was a small business concern, i.e.,

none employed fewer than 500 persons. The military department concerned directed that awards be made to the two lowest bidders of the small business concerns of quantities aggregating approximately 1/6 of the total procurement. The theory was that 1/6 of the total procurement was a fair proportion of the total purchase to be placed with small business. However, this action resulted in the purchase of 110,000 pairs of shoes at prices higher than those submitted by bidders classified as big business. The Comptroller General stated that the declared policy of Congress asserting that a fair proportion of total purchases and contracts shall be placed with small business concerns, "standing alone, does not authorize the purchase from, or award of contracts to, concerns qualifying as small business concerns in complete disregard of procurement from other sources at lower prices." The Comptroller General concluded that the awards to the companies which were not the low bidders should not have been made but added that "since it is apparent that the awards in these instances were made in good faith prior to an authoritative interpretation of the statute" he would not object to the awards as made." However, he cautioned, "Steps should be taken administratively . . . to insure proper compliance with the statute in the future." (Opinions of the Comptroller General of the United States, B-84343, May 20, 1949.)

Subsequently, in an advance opinion rendered to the Chairman of the Committee on the Judiciary,

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The author of this article is a Washington attorney, serving as Economist in the Navy Department, where he has been in close touch with the problems herein discussed. The opinions expressed are his own, and are not to be construed as official or reflecting the views of the Navy Department.

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House of Representatives, the Comptroller General aligned himself with the now obvious drift of the political winds and stated that he would offer no objection to an executive policy of automatic award to small business in the event of tie low bids between a small business and a big business. Here, then, is the anomaly of a legislative agency rendering two seemingly inconsistent opinions. Small business is *not* a factor to be considered in making an award, and small business is a factor to be considered in making an award! The legalists reconcile these two administrative interpretations by expressing the rule as follows: When the procurement is an advertised one, the fact that a bidder is a small business is a factor to be considered in making the award, provided there are tie low bids and provided further that the small business has submitted one of these tie low bids. The splitting of this legal hair, while it does not square with numerous decisions of accounting offices of the Government, apparently is satisfactory to Congress if this inference can be drawn from the absence of Congressional criticism.

#### How Small Is Small?

Unfortunately, this more recent decision of the Comptroller General closed the door to the cat and admitted the mouse. "Small business" could no longer remain a phrase everyone understood but no one could explain. A workable definition of objective applicability had to be adopted. In order to comply with certain statistical reporting requirements of the President, the Services, since 19 May 1949, had been utilizing an abbreviated definition, a watered-down version of a broader definition placed by Congress on the statute books.

This statutory definition established three concurrent standards for use as a yardstick in measuring the size of a business and categorizing it as small: (1) fewer than 500 employees; (2) not dominant in the industry; and (3) independently owned and operated. Through a process of word surgery the two latter standards were excised from the definition and the compilation of statistics by the Services proceeded on the theory that a small business was one which employed fewer than 500 persons. This excision was necessitated by the ambiguity of the phrase "dominant in the industry" and the impracticability of investigating hun-

dreds of thousands of suppliers to determine whether each was "independently owned and operated." In addition, there existed the difficulty of reducing the word "independent" to a measurable quality. The subjective was discarded; the objective, retained.

A definition premised upon a single arbitrary standard was bound to result in a number of absurd statistical classifications. In some cases the "number-of-employees" definition was not tailored to the nature or type of business. These were the businesses where volume of sales, capitalization, relative

Many items of military requirements are obtainable only from Big Business. Where Big Business and Small Business are in competition, Small Business has been successful in securing better than two orders out of every five, on a dollar volume basis. Additionally, Small Business participates substantially in Big Business' share as sub-supplier or subcontractor.

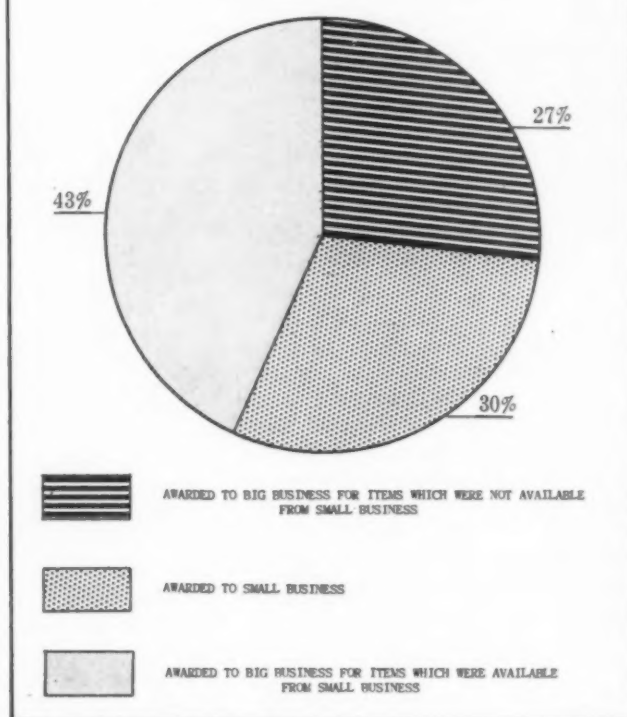
share of the particular industry's productive capacity, or some other criterion, would have been more appropriate. In other instances a subsidiary of Sperry Corporation, a branch office of Kraft Foods, a local plant of Armour & Co., were classified statistically as small business since each individually employed fewer than 500 persons.

However, it should not be inferred that classification on the basis of number of employees is valueless. The misclassifications constituted a relatively small percentage of the total classified—a

fraction of 1%. Nevertheless, it was clear that the system needed adjustment. Accordingly, there was grafted on the "number-of-employees-in-the-firm" definition the words "and its affiliates." Thereafter, a small business was one which, with its affiliates, employed fewer than 500 persons. The ghost of the old statutory "independent-ownership-and-operation" qualification was reincarnated in the form of the word "affiliates". Although the ghost was named, no one desired to describe it.

Almost simultaneously with the promulgation of this new Service

DISTRIBUTION OF  
THE MILITARY PROCUREMENT DOLLAR  
THROUGH PRIME CONTRACTS



definition of small business, a bill was introduced in Congress to create a Small Business Coordinator. This Coordinator, aided by six highly-paid assistants, would, among other things, bear the responsibility for formulating a cure-all definition of small business.

History, however, did not wait for the legislators to act. The first test of the new Service definition of small business arrived. In response to an invitation for bids, tie low bids were received from "A" Company, a business employing 200 persons, and from "B" Company, a

business employing 600 persons. "X" Company, employing 400 persons, owned 65% of the voting stock of "A" Company. "A" Company contended that, in line with the advisory opinion of the Comptroller General and the expressed policy of the Armed Services, the award should be made automatically to "A" Company. "B" Company, on the other hand, contended that "A" Company was an affiliate of "X" Company and, therefore, the award should be made by lot. The Munitions Board decided that affiliation existed. The award was split. This Munitions Board decision did not settle the broader issues. The most that could be said was: Under certain circumstances 65% stock ownership by one company of another constitutes affiliation.

#### What Is a "Fair Proportion"?

The job of defining "small business" is a kindergarten problem contrasted with the task of defining "fair proportion". The puzzle has an Alice in Wonderland quality. Everyone agrees on the premise, i.e., that small business should get its fair share of the military procurement dollar. After that, everyone disagrees. For a reasonable discussion of the matter, an arbitrary definition of small business must be adopted. Statistics for Fiscal Year 1949 are available uniformly for the three Services on the basis of the "fewer-than-500-employees" definition. Future references to statistical data will be to these statistics for that period of time, unless otherwise noted.

"Fair proportion to small business" is a volatile political concept. As such, a fair share is never a fixed quantity but always a constantly changing synthesis of conflicting political interests. The application of economic principles and statistical facts to the fair-share theorem can indicate discrepancies where extremes exist; it cannot indicate the relative percentile value of a "fair proportion". Analyses of procurement policies, practices, and statistics prove that under existing circumstances and conditions small business does obtain a *substantial* share of the military procurement dollar.

The primary purpose of the procurement activities of the military Services is to obtain for the United States at the lowest price the best of supplies, services, and equipment for the efficient maintenance of the Government's defense programs. If subsidization of small business is

the intent of Congress, it is still not within the power of the Services to implement this intent. The military Services would be derelict in their common duty if they authorized procurement of an item for which they had no requirements for the purpose of saving even one small-business manufacturer or supplier from financial calamity. Small business offers for sale thousands of items for which the military has few or no requirements. If the volume of the military's business with small business is to be compared with the productive capacity of small business or the volume of commercial sales of small business or the number of small businesses, these few- or no-requirement fields should be eliminated from the comparison.

Small business often cannot satisfy military requirements. Big business has a virtual monopoly in such fields as shipbuilding, aircraft manufacture, automotive vehicles, turbines, Diesel engines, etc. And although small business could build a destroyer, given time, this method would hardly be expedient for military exigency.

Reliable estimates have been made that over one half of the Army's and Navy's procurement dollars awarded to big business, and over three-quarters of the Air Force's procurement dollars awarded to big business, were expended for supplies, services, and equipment which, because of the nature of the item involved, were not available from small business. (See chart.) It would be unreasonable to assume from the fact that 100% of the Navy's shipbuilding contracts are with big business, that the Navy Department is discriminating against small business. If the Navy is to have ships, the economic facts of life dictate the necessity of purchasing these ships from big business. The logic is incontrovertible that those military procurement dollars not susceptible of being awarded to small business should be subtracted from the total in any appraisal of small business' fair share. Total military procurement dollars *minus* the military procurement dollars expended for items not available from small business is the base against which the appraisal of small business' "fair proportion" should be measured. Approximately one half of this remainder actually was awarded to small business concerns. Moreover, even this arithmetic does not show the full extent of small business participa-

tion in Department of Defense contracts.

Small business concerns participate indirectly in military procurement as sub-suppliers and subcontractors under contracts awarded to big business concerns. The Departments of Army, Navy, and Air Force, in cooperation with the Munitions Board Industry Advisory Committee on Military-Contractor Relationships, are considering the undertaking of a study which will determine, in some detail, the extent to which prime contractors further distribute business under a particular contract to small and large concerns. The study was designed to ascertain for selected prime contracts the degree of small business' indirect participation in military procurement as sub-suppliers and subcontractors in the first and second tiers. In an implementing survey, industry data will be compiled to show the extent to which small business is benefitted by the military procurement dollars awarded on a prime basis to big business.

#### Legal Limitations

What are the legal limitations? The law specifies that advertised procurements shall be the rule, negotiated procurements the exception. Award is made to the low bidder in an advertised procurement. Contracting officers have the authority to reject a low bid under certain circumstances. The size of a business (i.e., whether it is large or small) is not one of the circumstances upon which a bid-rejection may be based. In many fields a big business can under-price small business by reason of lower unit costs of production resulting from quantity purchases and volume of sales. It is inevitable that in these fields big business will submit lower bids than small business.

The law sets forth seventeen exceptions to the rule of advertised procurement. These seventeen negotiation authorities were aimed at meeting certain procurement situations. If the circumstances surrounding a contemplated procurement fit into one of these situations, the procurement may be negotiated. Otherwise, the procurement must be advertised. The size of a business (i.e., whether it is small or large) is not a factor to be considered in determining whether a negotiation situation exists. As in advertised procurements, the hands of the contracting officer are tied when the small versus big business  
(Please turn to page 218)

# Trade-Marks, Tradenames, and Unfair Competition

Trade-mark laws are designed to protect the customer as well as the competitor

There are limitations on the way you can use even your own name in business

Tradenames implying sponsorship of a product can be ruled illegal

● By Leo T. Parker

RECENTLY a reader wrote as follows: "I am purchasing agent for a large corporation. Our company just lately lost a law suit which related to a large quantity of merchandise purchased from a not very well established seller at a low price. An old established seller filed suit against our corporation and our seller claiming the purchased goods had a trade-mark which was infringing. The case was finally decided that the trade-mark on the goods we purchased was an infringement and we had an injunction filed against us which prevented us from selling the goods. We had to sell it for junk. Please give me some rules and data to which I can refer to avoid in the future similar situations of buying merchandise having infringement trade-marks. Also, what are the legal distinctions between trade-marks and tradenames? And can an employer prevent an employee from using a secret process? I have reference to a secret process on which the employer has no trade-mark or other protection."

## Confidential Information

First, it is interesting to review the law on secret processes, and the duties of employees to act fairly toward their employers. This law is applicable to all employees, including purchasing agents. Recently a higher court held that not only is an employee liable for earning secret profits at the expense of his employer, but also the company with which the employee connects himself on secret business transactions is fully liable for earned profits.

The latest higher court case in-

volving these points of law is *Hollander v. Imperial Fur Blending Company*, 66 Atl. (2d) 319. This case was decided only a few weeks ago, and showed these facts: A man named Singer owned a business which went bankrupt. Afterward he took a position as manager, purchasing agent, and confidential employee with Hollander and Son, and had charge of a branch office. Singer was paid a salary of \$7,500 per year. Both the employer and



Singer signed a contract of employment which among other things stated that Singer, being a confidential employee, would not divulge any of his employer's trade secrets or processes. As manager of the branch plant, Singer was entrusted with the Master and Current Formulae books. After working for several years, Singer secretly organized a competing company, the Imperial Fur Blending Corporation. Singer kept in telephone communication with the latter company but did not appear at its plant for fear of disclosing his interest in the competing company at the time he was on Hollander's payroll. Later Singer resigned his position with Hollander and Son.

Hollander sued both Singer and the Imperial Fur Blending Corporation, and asked the court to award it the profits earned by the latter company, and also compel Singer to repay \$15,000 salary received during the past two years during which time the Imperial Fur Blending Corporation was in operation. The higher court held in favor of the Hollander and Son, and said:

"The record establishes beyond doubt Singer's infidelity to Hollander through failure to serve faithfully and exclusively; divulgence of trade secrets to Imperial Corporation, specifically organized by him to compete with Hollander during the period of employment; granting to Imperial of formulae developed by him; and active competition against Hollander subsequent to discharge. . . . The appellant (Hollander and Son) has established its right to injunctive relief and an accounting of the profits made by respondents (Imperial Fur Blending Corporation). . . . Singer is not entitled to retain the salary paid to him amounting to \$15,000. These payments were made at a time when he was actively pursuing outside business activities contrary to the employment agreement."

## Employee's Infidelity

With respect to the validity of a clause in an employment contract which restricts an ordinary employee to faithful service, the court said:

"The fact the employee's services are not of a kind requiring unique skill and ability is immaterial as the main problem is the reasonable



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protection to the employer. Where the employee through his employment has learned of the business practices and methods of his employer which, if disclosed to a competitor, may result in irreparable injury to the complainant, the court may presume irreparable injury will ensue from the breach of the covenant."

For comparison, see *Renwood Food Products, Inc. v. Schaefer*, 223 S. W. (2d) 144. Here it was shown that one Schaefer was employed by the Renwood Food Products under a written contract containing a clause in which Schaefer agreed that he would not engage in distributing frozen foods or in any competitive business within the trade area served by Renwood Food Products for one year from termination of his employment.

Schaefer violated this agreement and the Renwood Food Products filed suit. The higher court ordered Schaefer to not breach the contract, saying:

"The restrictions of the contract sought to be enforced in this case are limited as to time, namely, for a period of one year from the termination of defendant's employment. This limitation is, in our judgment, entirely reasonable under the facts and circumstances in evidence. . . . It is our conclusion that the plaintiff (*Renwood Food Products, Inc.*) was entitled to the equitable relief sought."

#### Soliciting Customers

Another important point of law is that a seller may solicit competitor's customers without being liable in damages, providing the seller does not practice fraud, create or continue an illegal restraint of competition, or induce a competitor's customer to cancel or breach a contract.



In *Regal Home Distributors, Inc. v. Gordon*, 66 Atl. (2d) 754, the higher court held that two competitors may solicit the other's cus-

tomers and obtain sale contracts by any means not in violation of the above rules.

Notwithstanding the holdings in the above mentioned three cases, the higher courts consistently rule that neither an employee nor a competitor may without liability unfairly obtain a list of customers and solicit or mail advertising to the prospects included in the list. The court will promptly grant an injunction against this practice.

For example, in *Sandler v. Gordon*, 210 Pac. (2d) 314, it was shown that one Sandler sued a competitor named Gordon for damages. Sandler proved that Gordon had surreptitiously acquired lists and solicited certain of Sandler's established customers. The court found that Sandler had prepared and owned lists of customers which Gordon's employee Barr acquired by taking them from Sandler's place of business. Gordon used these lists of names and located Sandler's customers and solicited business from them.

The higher court awarded Sandler heavy damages, saying:

"It seems fair to assume that the actual net loss sustained by respondent (*Sandler*) was \$1,145.40. Appellant (*Gordon*) was guilty of oppression and malice. In such case, exemplary damages may be imposed."

Also, in this case the court awarded Sandler not only actual damages sustained by Gordon's unfair practice of obtaining and soliciting Sandler's customers, but allowed \$500 punitive damages. And Gordon was restrained by the court from soliciting or servicing any of Sandler's customers.

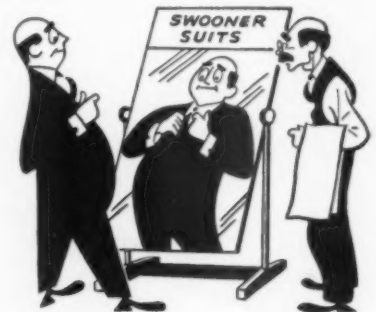
#### Infringing Trade-Marks

In the past numerous higher courts enjoined purchasers from reselling merchandise bearing infringing trademarks. And very frequently such purchasers are held liable in heavy damages. Hence, to enable purchasers to avoid the pitfall of stocking up with unsalable merchandise, which bears infringing trade-marks, we shall briefly review new and outstanding decisions dealing with infringement of trade-marks.

First, it is important to know that the courts recognize the fact that if similar trade-marks are used on goods of the same descriptive properties, their concurrent use by different sellers would be likely to cause confusion and deceive pur-

chasers. Therefore, similar trade-marks on goods in the same classification cannot be registered nor used. However, two similar trade-marks can be registered on merchandise which does not possess the same properties.

For illustration, in *Daggett & Ramsdell v. Samuel*, 166 Fed. (2d) 151, a manufacturer applied to the United States Patent Office for the registration of the trade-mark "Harol" on a hair conditioner. Another manufacturer applied for registration of a similar trade-mark for use on a preparation for "relief of headache, neuralgia, and similar pains".



The higher court ordered the Commissioner to grant the registration, and said:

"We are of opinion that the goods of the parties do not possess the same descriptive properties."

#### Not Affixed

According to a recent higher court no manufacturer may claim ownership of a trade-mark not affixed to the goods, or to containers of the goods, which the mark represents.

See *Cole of California, Inc. v. Grayson, Inc.*, 165 Pac. (2d) 963. Here a manufacturer of women's and children's wearing apparel in the Los Angeles area used the word "Swooner" as a trade-mark and invested some \$15,000 in its national advertising campaign. Another manufacturer previously had used the word "Swooner" in connection with its product by placing in windows cardboard signs having the trade-mark printed thereon. In other words, this latter manufacturer began using but not affixing the trade-mark "Swooner" before the other manufacturer.

The Federal Court held that the latter manufacturer, which had not affixed the mark to its goods, could not continue using the mark

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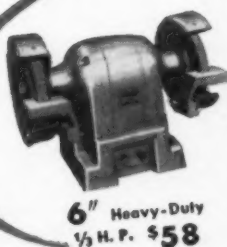
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"Swooner", because he had *not* established his priority.

Modern higher courts consistently hold that one must use his own name honestly and not as a means of pirating the good will and reputation of a business rival. Therefore, where a manufacturer cannot use his own name without inevitably representing his goods as those of another, he may be enjoined from using his name in connection with his business.

#### Cannot Use Own Name

For illustration, in *Jackman v. Mau*, 177 Pac. (2d) 599, it was shown that one Jackman used his own name as a trade-mark on cotton goods. Since another person named Jackman had previously used his name on cotton goods, the court held:

"The fact that defendant was using his own name does not shield him from injunctive action if such use is calculated to cause confusion or to deceive."

For comparison, see *Vanity, Inc. v. Pedigree, Inc.*, 161 Fed. (2d) 226. In this case it was shown that a company applied for the registration of its trade-mark, "Pediglo". The application alleged that this company "has adopted and used the trade-mark . . . for piece goods of rayon yarn".

Another company filed an opposition suit to the registration of the "Pediglo" trade-mark, and cited prior use of its mark, "Pechglo", which was registered for "knitted and textile underwear and hosiery for women and children".

The court refused to register the trade-mark "Pediglo" and said:

"When the goods of the respective parties are referred to as 'Pechglo' and 'Pediglo' it seems to us that there can be little doubt that confusion would probably result. As has been said often, the field is broad from which to select a trade-mark to indicate the origin in its owner without invading fields preempted by others."

#### No Infringement

According to a recent higher court where a trade-mark is merely suggestive or descriptive it affords only "weak" protection to its user.

For example, in *Majestic Manufacturing Company v. Majestic Electric Appliance Company, Inc.*, 172 Fed (2d) 862, the testimony showed that the Majestic Manufacturing Company, for more than 50 years, has manufactured under

the trade-mark "Majestic" coal and gas stoves and ranges, and electric hot plates. The Majestic Electric Appliance Company, Inc., manufactures and sells electric irons, toasters and appliances on which it later adopted the trade-mark "Majestic".

The Majestic Manufacturing Company sued the Majestic Electric Appliance Company, Inc., for trade-mark infringement and unfair competition. The court refused to hold that infringement existed, and said:

"There is no specific competition between the parties, and the trade-mark is not original, arbitrary or fanciful. . . . We note that there was no proof of any confusion in the minds of customers as to the source of the products of the respective parties. . . ."

#### Suit Involves Color

Considerable discussion has arisen from time to time over the legal question: When is color a satisfactory element of a trade-mark? The answer is: Only when it is used in combination with a design, a picture or a geometrical figure.



For illustration, in *Campbell Soup Company v. Armour and Company*, 175 Fed. (2d) 795, the Campbell Soup Company filed suit for damages and asked the court to grant an injunction to stop the use by the Armour Company of a red and white label used on some of its food products.

The counsel for the Campbell Soup Company contended that the latter company had exclusive right to use the color combination of white and red on labels of its food products. The higher court refused to hold in favor of Campbell Soup Company, saying:

"What the plaintiffs (Campbell Soup Company) are really asking for, then, is a right to the exclusive use of labels which are half red and half white for food products. If they may thus monopolize red in all of its shades the next manu-

facturer may monopolize orange in all its shades and the next yellow in the same way. Obviously, the list of colors will soon run out. That a man cannot acquire a trade-mark by color alone has been stated a good many times in decisions."

For comparison, see *Pacific Coast Condensed Milk Company v. Frye and Company*, 147 P. 865. The court said:

"The primary colors are few, and as the evidence shows those suitable for light products, such as milk, are even more limited. To allow them to be appropriated as distinguishing marks would foster monopoly by foreclosing the use by others of any tasty dress."

For further comparison, see *Heddon's Sons v. Millsite Works*, 6 Cir., 128 F. (2d) 6. This court held that color is a lawful element of a trade-mark if it is used in combination with a distinctive design.

#### No Confusion

Recently a higher court held that two somewhat similar trade-marks can be registered on the same merchandise, if the public will not be deceived into believing that the merchandise of one manufacturer is the merchandise of the other.

In *Gaby, Inc., v. Irene Blake Cosmetics, Inc.*, 166 Fed. (2d) 164, a manufacturer applied for registration of the trade-mark "Gabardine" in the United States Patent Office. It is used on shave powder, shave lotion and hair dressing. The Court of Customs and Patent Appeals held that registration would *not* be denied although the trade-mark "Gaby" has for many years been used on a large variety of cosmetics, some of which were of the same descriptive properties. This court said:

"'Gaby' and 'Gabardine' begin with the same three letters, but not with the same syllable. . . . I am convinced that the two differ sufficiently in appearance, sound, and significance to be used concurrently in trade without any reasonable likelihood of confusion."

For comparison, see *Morton Manufacturing Company v. Delland Corporation*, 166 Fed. (2d) 191. In this late case the court held that a manufacturer of a skin preparation called "Chap Stick" was not entitled to exclusive use of the word "Stick" in its trade-mark, since this word is merely descriptive of

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the shape or form of the product. Hence, the court decided that a manufacturer of similar merchandise could register and use its trade-mark, saying:

"The question presented is whether 'Slick Stick' is confusingly similar to the trade-mark 'Chap Stick'. We are of opinion that the concurrent use by the parties of their marks on their respective goods would not be likely to cause confusion in trade or deceive purchasers."

#### Not Competitive

According to a recent higher court, two identical trade-marks may be used by two different companies on goods in different classifications. See *McKesson, Inc. v. Isenberg*, 167 Fed. (2d) 510, the higher court held that razor blades and shampoo are not goods of the "same descriptive properties". This court held that the same trade-mark "Shavel" may be granted to be used by two manufacturers on shampoo and razor blades respectively, because use of marks would not be likely to confuse purchasers.

#### New Trade-mark Law

Hence the owners of two identical trade-marks used on goods in different classifications may register them in the United States Patent Office. But *similar* trade-marks used on goods in remotely the same classification cannot be registered.

For example, in *Landon P. Smith v. Babbitt Company*, 175 Fed. (2d) 590, the testimony showed these facts: The Babbitt Company has been in the business of manufacturing and selling a chemical or powder cleaner, known as "Red Devil", for pots, pans, etc. This company registered the trade-mark "Red Devil" in the United States Patent Office in 1926. Ten years later another company began using the trade-mark "Red Devil" on tools, putty knives, wall-scrapers, wood-scrapers, and the like. Then it filed the trade-mark "Red Devil" for registration in the United States Patent Office for use on a new product, namely *metallic* pan and pot cleaners. The United States Court of Customs and Patent Appeals refused registration and said:

"The statute prohibits the registration of the mark as against the prior user thereof on goods of the same descriptive properties."

This court said further that me-

tallic pot cleaners and a powder for cleaning and scouring pots and pans are the same descriptive properties, and in the same classification, *because* the same kitchen workers, as household wives, purchase the items for the same purpose, namely, to clean pots and pans.

#### Confusing Trade-marks

Recently a Federal court held two trade-marks, in circles, used on similar products, cannot be registered.

In *Vitamin Corporation of America v. American Home Products Corporation*, 166 Fed. (2d) 203, it was shown that a company registered and used a trade-mark



"I.V.C." which is displayed against a circular background. Another company applied for registration of a trade-mark "VCA" printed on the outline map of the United States and *inclosed in circle*.

The Court of Customs and Patent Appeals refused to register the latter trade-mark, saying:

"We are of opinion that the combination of letters used by appellant, in view of the practical identity of the goods to which the parties apply their marks, are so closely similar that confusion is likely."

Also, see *Crystal Corporation v. Manhattan Chemical Mfg. Company, Inc.*, etc. 75 F. (2d) 506. There it was held by a higher court that the trade-mark "T. Z. L. R." was confusingly similar to a mark in which the combination "Z. B. T." was the dominant part of the mark, when both marks were used on talcum powder.

Also, see *Skol, Inc. v. Olson*, 151 Fed. (2d) 200, where the testimony showed that two manufacturers used the trade-marks "Skol" and "Skoal," which are identical in sound. The higher court held that it is illegal for both manufacturers to use these trade-marks on the same kind of merchandise. The court said:

"The merchandise is, or is likely to be, sold in the same class of markets, etc. Under the law, similarity of sound is of itself sufficient to constitute confusing similarity of marks when the marks are applied to merchandise of the same descriptive properties."

#### Copied Name

Modern higher courts hold that a seller may not copy or imitate a trade-mark or tradename used by a competitor.

For example, in *Yale Co-op. Corporation v. Rogin*, 53 Atl. (2d) 383, it was shown that a company has for many years used the trade-name "Yale Co-op" on books.

A competitor began using the tradename "Yale Co-op Books". The original company sued to prevent the competitor from selling books labeled with an abbreviation or contraction of its tradename. The higher court granted the injunction, and said:

"The injunction is sweeping in its terms. Its purport is that the defendant must not use the plaintiff's name or a colorable imitation of it, such as 'Yale Co-op,' in connection with the printing, binding, preparation, publication, distribution or sale of any books or other printed matter, or in connection with the conduct or operation of any business similar to the business of the plaintiff."



Also, see *Triangle Publications, Inc. v. Rohrlisch*, 167 Fed. (2d) 969. Here it was shown that the owner of a registered trade-mark "Seventeen" used as title of a magazine sued a manufacturer of girdles under name "Miss Seventeen".

The higher court decided that the registered trade-mark "Seventeen", as title of the magazine, had *come to indicate* sponsorship in a teen-age fashion field. Hence, the higher court held that the manufacturer of girdles could not use





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**HEADLINES** warn us of the menace of spies and subversive agents. But in every community there is a hazard, largely unrecognized, which may become ready tinder for the ravaging flames of socialism and communism. This is the misconception of everyday economic facts that exist among our young people.

For example, a recent poll among high school seniors shows that the majority of them believe that the owners of business take out for themselves a larger share of the income than is paid to employees. They think the stockholders' average return is 24% of the sales dollar. The truth is that stockholders average less than 3%, whereas over 30% of the income dollar is paid out as wages, pensions and other benefits.

Our young people do not seem to realize that paying dividends is only one function of profits. Far more important today is the need for profit to keep business competitive, and to pay for new buildings, machinery, and other necessary equipment and to provide new and more jobs. Ignorance of this fundamental concept breeds contempt for the system of enterprise that built our country and keeps it strong.

The facts of business must be given to our boys and girls to protect their future. Only business men can supply the facts. As a business leader in your community, it is your responsibility to help clear up such misconceptions. The old story that Nero fiddled while Rome burned must not have a counterpart in America.



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the trade-mark "Miss Seventeen", and said:

"The word 'Seventeen' had almost immediately acquired a secondary meaning and that the defendants' (manufacturer's) use of that word was likely to cause a confusion as to sponsorship by plaintiff that might be harmful to the latter's reputation."

#### Trade-mark vs. Tradename

The distinction between a trade-mark and tradename resides in the fact that the former is applied to merchandise, whereas the latter is the name of a business, individual, partnership firm, or corporation.

Considerable discussion has arisen from time to time over the legal question: When and under what circumstances can a business operator prevent a competitor from adopting and using a similar tradename? The answer is: Only when the older user adopted an *original* or unusual tradename which does not contain the name of the state, county, city, or street where the business is located.

For example, in *Mann v. Parkway*, 85 N. E. (2d) 210, the testimony showed that in 1917 a man named Mann began operating a business in which was the word "Parkway". The business was on an avenue commonly known as the "Parkway". In 1946 another company opened a similar business under the name "New Home of Parkway Sales". Mann filed suit and asked the court to enjoin use of the name "Parkway" by the competitor.

The higher court refused to issue the injunction, saying:

"Upon all the evidence, the word 'Parkway' had not acquired a secondary meaning as designating the plaintiff's place of business."

#### Cannot Use Own Name

Many higher courts have refused to allow persons to use their own names.

In *S. M. Spencer Mfg. Company v. Spencer*, 66 N. E. (2d) 19, the testimony showed that a man named Spencer for about twenty years or more had been employed by Spencer Manufacturing Company. Spencer began a competitive business under his own name.

The Spencer Manufacturing Company filed suit and the lower court ordered Spencer to discontinue using this tradename within a quarter mile of the company's location. The higher court held that Spencer

should not have been enjoined merely from unrestricted use of the name "Spencer" within one-quarter mile of the company's place of business, but should have been enjoined from such use over the *entire* city.

Thus, in cases where a person's own name is likely to confuse the public, it can be used only under circumstances that will not interfere with the good will of the original user.

For comparison, see *Katz Drug Company v. Katz*, 217 S. W. (2d) 286. Here the testimony showed facts, as follows: In 1915, brothers named Isaac and Michael Katz founded a corporation. From the very beginning they used the name Katz Drug Company, and the name "Katz" was printed in a distinctive script.



A man named Jerry Katz opened a new business near the Katz Drug Company's location. On the front of the building he had painted the name "Katz" in distinctive script.

The Katz Drug Company filed suit and asked the court to grant an injunction prohibiting Jerry Katz from using his own name in this manner. The higher court granted the injunction, saying:

"Under present general law, the use of another's mark or name, even in a noncompetitive field, where the object of the user is to trade on the other's reputation and good will, or where that necessarily will be the result, may constitute unfair competition. . . . It will be noted that the judgment does not prohibit defendant (Jerry Katz) from using the name 'Katz' in any other manner which does not copy or imitate plaintiff's (Katz Drug Company's) tradename so closely that it would tend to confuse and mislead the public. In other words, he is not denied the right to use his own name generally, but is only prohibited from using it in such a manner as to infringe upon the tradename of plaintiff."

This court also explained these facts: A trade-mark is a sign, device or mark by which merchandise produced or dealt in by a particular manufacturer or seller is distinguished or distinguishable from merchandise sold by others. A trade-mark must be *affixed* to the goods or articles.

A tradename is descriptive of the manufacturer or dealer and is the name of the business itself.

#### Different Business

Considerable discussion has arisen over this legal question: Can a business operator prevent another from using a similar tradename in an entirely different business?

According to a recent higher court the answer is "yes".

For example, in *Kay Jewelry Company v. Kapiloff*, 49 S. E. (2d) 19, the Kay Jewelry Company sued the Kay's Credit Clothiers for infringement of the former's tradename and unfair trade competition.

The testimony showed that Kay Jewelry Company has been engaged in the retail credit jewelry business since 1936. While its principal business is the retail sale of jewelry, it also sells other items not ordinarily sold in jewelry stores, such as radios, china, kitchen utensils, luggage, etc. It advertised slogans as: "It's O. K. to owe Kay" "Stop at Kay's today," and "Pay Kay pay day".

Another company which operated a clothing store began using the name "Kay Credit Clothiers".

#### Relief from Infringement

The jewelry company filed suit and asked the court to stop use of this name of the clothing company. This court held that the Kay Jewelry Company would be entitled to injunctive relief from alleged infringement of its tradename and unfair competition by "Kay Credit Clothiers", although the companies do not deal in competitive goods, upon proof of the new company's purpose to capitalize on the advertising, reputation, good will, and name of the jewelry company.

The court said:

"If the defendant's conduct is likely to cause confusion of the traders, so that the public believes or is likely to believe that the goods of the defendant are the goods of the plaintiff, or that the plaintiff is some way connected with or is a sponsor for the defendant, then a sufficient case is made out for injunctive relief."

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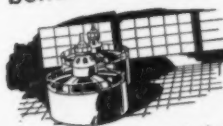
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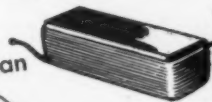
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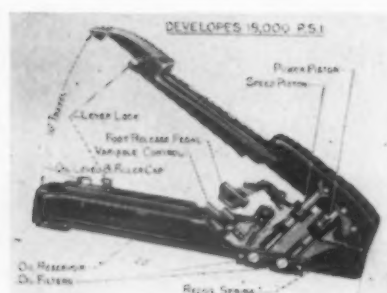


# New Products Ideas



If you want more information on New Products items, just list the item numbers in a letter to Purchasing Reader-Service Department on your company letterhead. This also applies to Catalogs and Bulletins described on Pages 19, 20, 22, 24 and 151. See Page 19.

## Hydraulic Jack



The "Go-Jak" foot operated hydraulic jack is a precision made tool developing up to 20 tons pressure, making it suited for the assembly or disassembly of large parts, force fitted parts, and other machine shop and repair shop applications. It can also be adapted to, or built into, existing machinery. Both pumping and releasing phases of operation are under complete foot control at all times, leaving both hands of operator free to do work normally requiring an assistant. Selector valves allows operator to choose from two speeds. The jack is made by Wihl Industries, Lewis St., Eatontown, N. J.

No. 101—For further information see page 19

## V-Belts

A new line of super-rated V-Belts, named "HY-T", incorporating a chemically produced fibre of extremely high-strength, low-stretch and excellent shock absorbing qualities has been developed by Goodyear Tire & Rubber Co., Akron, O. Goodyear says the new synthetic cord is also water and mildew resistant. The great strength of the fibre, used for the first time in the HY-T, enables the belt to handle

40% more hp than standard multi-v-belts without excessive stretch, it is claimed. Inherent resistance to shrinking is listed as another advantage of the new fibre, giving the belt greater length stability than belts made prior to it.

No. 102—For further information see page 19

## Hand Lift Truck



Yale & Towne's latest "Stubby" Worksaver is a full 6" shorter than previous models of the same type. The saving has been effected between the battery box and front edge of the truck, thus retaining full platform lengths for handling skids and skid bins. The new size makes the truck even more adaptable for handling jobs in such confined areas as freight cars, street trucks, narrow aisles, etc. The truck is available in 4,000 and 6,000 lb. capacities. Standard platform lengths range from 36" to 72" in 6" increments. Heights of 6", 7", 9", 10", and 11" are available for handling skids of different heights. Platform widths are available in 29", 24", and 26" sizes. Yale & Towne Mfg. Co., Philadelphia Division, is at Philadelphia 15, Pa.

No. 103—For further information see page 19

## Wire Rope Sling



This flat-braided wire rope sling was designed by Macwhyte Corp., Kenosha, Wis., for a particular lifting operation requiring a sling with a maximum body width and minimum thickness in addition to light weight and flexibility. Known as the "Drew 14-part, Type 1 CT, flat-braided wire rope sling", it is fabricated from one endless wire rope. Because of this, the sling ends terminate in natural loops which are fitted with special Crescent thimbles. The sling is made to order in the length load and safe load capacity required.

No. 104—For further information see page 19

## Production Control

An electrically operated unit which produces a printed record of machine productivity and idle time, and a count of the work produced; shows when, how long and for what cause the idle time has occurred is being marketed by Chronolog, Inc., National Bank Bldg., Detroit, Mich., representative for the manufacturer, The National Acme Co. of Cleveland, O. It is suited to every type of production equipment that is subject to interruptions. Literature available.

No. 105—For further information see page 19

(Please turn to page 122)

**For Economical  
Carbide  
Grinding**

# NORTON *Has Complete Carbide Grinding Service*

## *Product Variety...*

to properly handle every carbide grinding job—two types of CRYSTOLON wheels and three types of diamond wheels.



## *Expert Engineering...*

by skilled abrasive engineers the country over, backed by carbide grinding specialists from the Worcester headquarters.



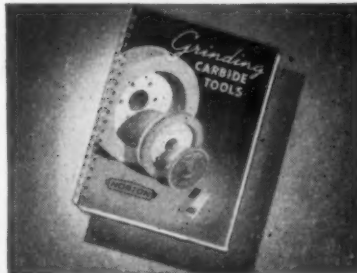
## *2 Instructive Films...*

in sound and color—one on carbide grinding and the other on the care and use of diamond wheels.



## *Carbide Grinding Handbook...*

140 pages of newly revised information on the grinding of single-point and multi-tooth tools. Sent without charge—ask for No. 167 -D-3



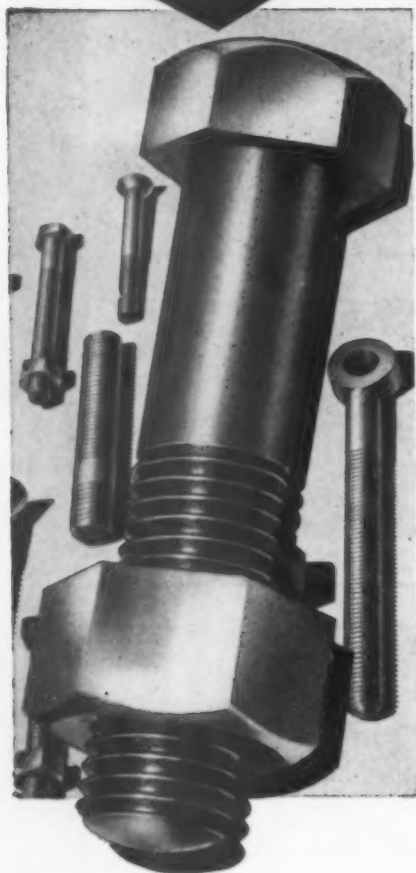
W-1308

**NORTON  
ABRASIVES**

NORTON COMPANY, WORCESTER, MASS. • Warehouses in Five Cities • Distributors in All

First for

**BOLTS  
NUTS  
STUDS**



- ★ Carbon Steel      ★ Stainless Steel
- ★ Heat-treated    ★ Silicon Bronze
- ★ Alloy Steels    ★ Naval Brass
- ★ Monel Metal

You can count on a uniform Class 3 Fit when you buy Pawtucket threaded fasteners. Accurately made in standard dimensions — or to your specifications.

**BETTER BOLTS SINCE 1882**

**Use Headed and Threaded Fasteners for Economy and Reliability**



## Chemical Cleaner for Welding and Silver Brazing

Formula 73, a wartime chemical cleaner developed for pre-cleaning and post cleaning of welding and silver brazing operations, is announced by the Sully Engineering Ltd., 11673 San Vincente Boulevard, Los Angeles 49, Calif. It can be used as a flux and is now used for preparation of sweat fittings on copper and brass tubing. Scully Engineering states that it will remove rust immediately on contact. It is non-flammable and non-toxic. It has a detergent action and will easily clean copper, brass, steel, iron and stainless steel, and will remove fluxes, heat scale and any surface corrosion.

No. 106—For further information see page 19

## Belted Generator



A new low priced generator that can be belted to any available power unit or tractor whenever power is needed in case of high line difficulties or failures, or for service in remote areas, has been put on the market by Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill. The generators are furnished in two sizes, 4 and 5 KW. They are of the four pole, self-excited type designed for operation at 1800 rpm, 60 cycle, 120 volts, which is the same frequency delivered by the high line. Type HF synthetic enameled wire is used in the winding of both the armature and field coils, and the wires are further impregnated with insulating varnish. All windings are completely waterproof.

No. 107—For further information see page 19

## Air Line Filter

Keller Tool Co., Grand Haven, Mich., has introduced a new air line filter that filters out all particles of dust, dirt, grit or scale down to .001". Anything smaller will not affect tool operation, Keller states. The filter element, in a two piece aluminum housing, is of porous, sin-

(Please turn to page 124)

*For Savings*



*Specify*

## Darnell CASTERS

**If you want maximum floor protection, economy and efficiency Demand Darnell Dependability...Made to give an extra long life of satisfactory service . . . .**

*Free Manual*

**DARNELL CORP. LTD.**  
LONG BEACH 4, CALIFORNIA

60 WALKER ST., NEW YORK 13, N.Y.  
36 N. CLINTON, CHICAGO 6, ILL.



# Why baking and drying costs go down with General Electric infrared lamps



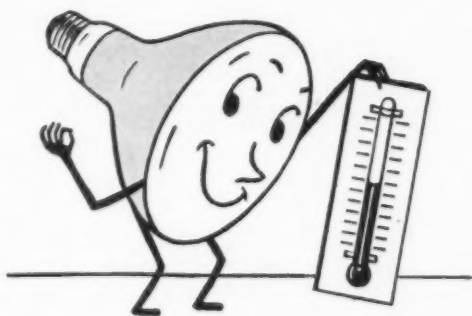
## 1. Give you more space

When you install infrared heating, you'll often gain valuable floor space. Infrared heating permits the use of compact units that require little room and can often be installed overhead and out of the way. Many users of General Electric heat lamps report space savings of up to 75%.



## 2. Give you quick heat

G-E infrared gives you quick heat at low cost . . . saves valuable time. A typical manufacturer reports baking time reduced 87% when he switched to infrared heating with General Electric lamps. You'll find G-E infrared lamps a speedy answer to many baking, drying, dehydrating and finishing problems.



## 3. Give close control

General Electric infrared is a natural answer for difficult heating problems because temperature can be held to a fraction of a degree. You get high product uniformity, fewer rejects. Infrared lamps generate short-wave infrared that puts the heat in the product—less heat in the air. And since lamps direct the heat accurately, there's less wasted. For more information on General Electric's complete line of infrared lamps, call your nearest G-E Lamp Department office, or write for the booklet below.



**FREE BOOKLET.** Gives data on General Electric's many infrared lamps, with application pictures and suggestions. Write for "Industrial Infrared Lamps", General Electric Company, Lamp Department, Nela Park, Cleveland 12, Ohio.



*You can put your confidence in—*

**GENERAL  ELECTRIC**

## BUSINESS IN MOTION

### *To our Colleagues in American Business...*

Quite a number of years ago Revere coined the phrase "Bubbles have teeth." This refers to the fact that what is called air entrainment is highly damaging to condenser tubes. Bubbles carried along with the cooling water set up a strong disturbance in it, disrupting the film that should protect the metal, and actually seeming to eat away the tube. The oxygen contained in the air bubbles also is destructive. Fortunately, the effects of air entrainment on condenser tubes are sufficiently distinctive to permit Revere Research to detect the trouble by examination of short lengths cut from tubes that have failed before their time.

Thus it happens that every once in a while the Research Department in Rome, New York, working through the Technical Advisory Service, is able to say that there is air leaking into a condenser it has never seen, in a far-off state. The problem then is to seal the water system against the entrance of air. This is not always an easy task, and it is one that the Revere Technical Advisory Service is glad to tackle together with the customer if asked to do so. After all, we want our condenser tubes to last as long as possible; that's what makes customers happy, and builds and preserves our reputation as producers of fine tubes.

In one such instance of bubble trouble, the operator, a public utility, could find no visible sign of a leak. Checking and tightening every bolt and seal produced no results. Finally it was decided to put plate glass windows in some of the inspection plates, in order to see what was

going on inside. This located the defect, a stream of bubbles being easily seen pouring out of a gasket. The water was flowing past that gasket with sufficient velocity to suck air in.

In another instance, a few samples of failed tubes from an oil refinery (located almost 3,000 miles away from the utility) were sent to Revere's Research Department. The refiner was told that his trouble was due to bubbles. Again, a check of the condenser showed nothing. The water inlet and outlet lines and all gaskets and bolts seemed to be perfectly

tight. Here was another puzzler. But once again it seemed plausible to assume that air was being drawn in where water velocity was high enough to create a suction. The search finally went all the way back to the water pumping station, where two cracked castings were located. Air sucked in through two tiny cracks was enough to do a lot of damage; bubbles do indeed have teeth.

You can see that Revere wants its customers to be satisfied, and to that end sometimes goes to great lengths to look into conditions for which it may be in no way responsible. This attitude is typical of American business; every company rightly regards the satisfied customer as a precious asset, the source of orders that support the business and its employees. Therefore it is suggested that if any product you buy for use in your business is not completely satisfactory, let the supplier know, even if you are sure the trouble is not his fault. He will be glad to cooperate with you.

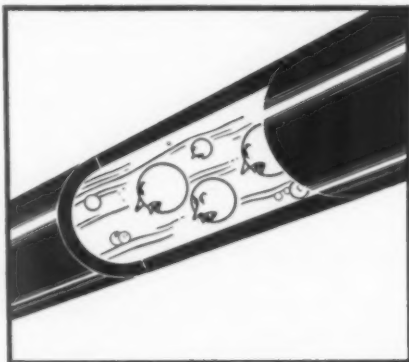
#### REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801



Executive Offices:

230 Park Avenue, New York 17, N. Y.



(Continued from page 122)

tered bronze, and is easily cleaned. The filter has a rated capacity of 40 cfm. Pressure drop is low, 1 lb. per square inch. Weight is 1½ lbs.; overall size is 3¾" x 2¾" x 5⅝".

No. 108—For further information see page 19

#### Headrest Goggle



American Optical Company, Southbridge, Mass., has adapted its "free-floating" headgear, used on welding helmets, to a new headrest goggle for gas welders, cutters, burners, brazers and furnace men. The new goggle is simply, easily adjusted to any headsize by a twist of a knob. The mechanism is enclosed in a fibre tube for insulation and to prevent hair pulling. The headgear provides perfect balance with no overhanging weight and the goggle may be instantly changed to the "off-guard" position by a flick of the wrist. The goggles, which may be worn over eyes or personal glasses, have well ventilated, indirect side shields to keep out sparks, metal splashes and stray light rays.

No. 109—For further information see page 19

#### Vacuum Cleaning Unit

A new 3 hp heavy-duty vacuum cleaning portable for continuous operation on heavy dust deposits has been introduced by Air Appliance Divn., U. S. Hoffman Machinery Corp., 105 Fourth Ave., New York 3, N. Y. Designated the Hoffco-Vac #30, it will operate one 50' length of 1½" vacuum hose. Dust container has an extra-large capacity of 4.4 cu. ft. Nine dust bags provide a total bag surface area of 30 sq. ft. This feature permits thorough separation of hazardous fine dusts. The unit is compact—66" long, 32¼" wide and 63½" high. Two fixed wheels and one swivel wheel, all rubber-tired and ball bearing, enable the machine to be turned in its own length and facilitate handling by one man.

No. 110—For further information see page 19

(Please turn to page 126)

# SENSITIVITY

VACUUM RELIEF  
VACUUM  
BACK PRESSURE  
BOILER STEAM  
REDUCED PRESSURE  
FLUID PRESSURE  
PUMP DISCHARGE  
MAX - MINIMUM

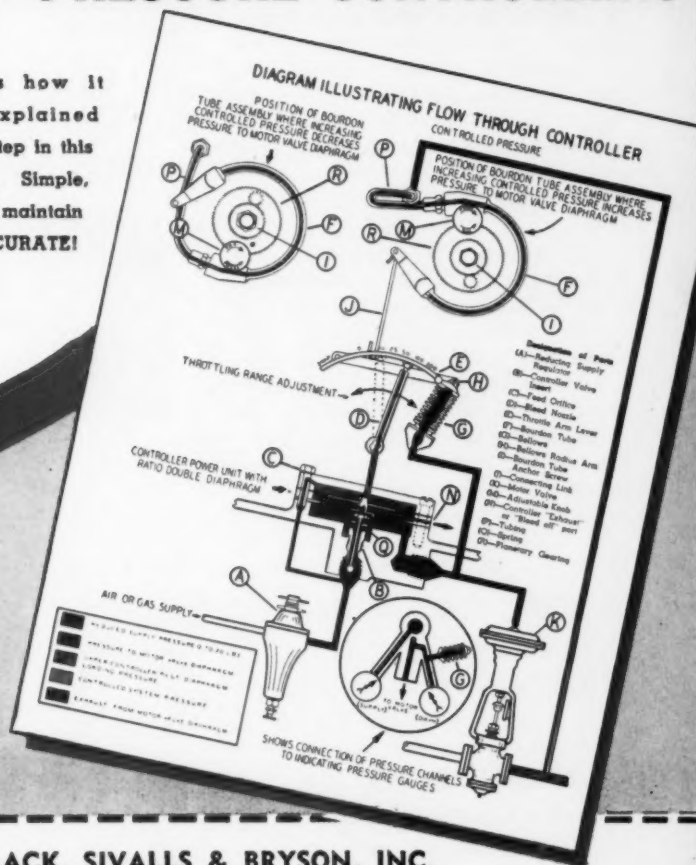
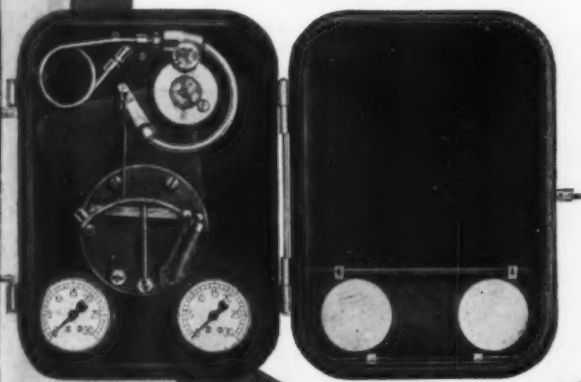
Type 1400 handles both positive and negative pressures, from high vacuum to 10,000 psi. It is adaptable to services requiring high sensitivity or to wide throttling ranges for dampening sensitivity. Overcomes hunting action which makes lined out pressure control difficult. Adjustable in the field for snap action. Bourdon-tube actuated.

**BS&B**

*Climax*

## TYPE 1400 PRESSURE CONTROLLERS

Here is how it works, explained step-by-step in this diagram. Simple, easy to maintain and ACCURATE!



Now you can be assured positive and sensitive response to pressure changes, with a controller characteristic usually obtained only in more expensive type recording instruments. Climax builds it right, for long service under all conditions. A multitude of special adaptations are possible... Ask your BS&B-Climax Man today!



### You Can Count on Your Climax Man

His sound backlog of experience in process controls is available for your own use. He will be pleased to help you beat a tough problem. He is readily available, just check the coupon. Naturally, all inquiries are held in strictest confidence.

**BLACK, SIVALLS & BRYSON, INC.**

Climax Controls Division

Sect. C4-88-7

720 Delaware St.

Kansas City 6, Mo.

I would like the complete story of the BS&B-Climax Type 1400 Pressure Controller . . . catalog, data, diagrams, prices. ☐ I want a Sales Engineer to call.

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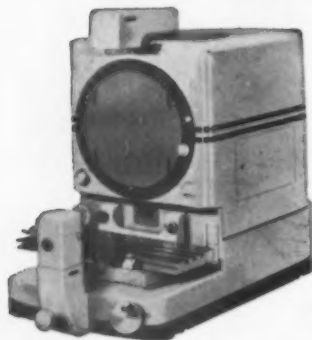


# Kodak

**New!**

## The KODAK CONTOUR PROJECTOR

MODEL 2



### the most versatile optical comparator you can buy

It handles large parts. There's 6¾ inches from lamp house to object and 8 inches from object to lens—at all magnifications. Front lamp house pivots to make room for long objects under surface illumination. Vertical travel is 4 inches.

It gives surface illumination in any of 5 planes, and switches instantly from surface illumination to silhouette projection, or to a combination of both. Instant dialing to any of 6 magnifications from 10× to 100× without distortion. The 14-inch screen is extra bright; no hoods or curtains needed—even in fully lighted rooms. Designed for all-day operator comfort, yet built to precise toolroom standards.

We'd like to show you how it can handle your own inspection problems.

### the KODAK CONTOUR PROJECTOR

**SHOWS**

{ contours, of course  
surface details . . .  
deep, blind holes

### EASTMAN KODAK COMPANY

Industrial Optical Sales Division

Rochester 4, N. Y.

46

Please send your booklet on  
the Kodak Contour Projector.

NAME \_\_\_\_\_

(Please print)

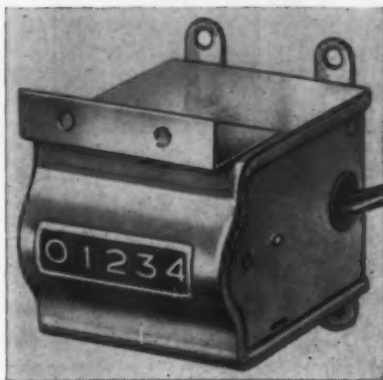
COMPANY \_\_\_\_\_

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STATE \_\_\_\_\_

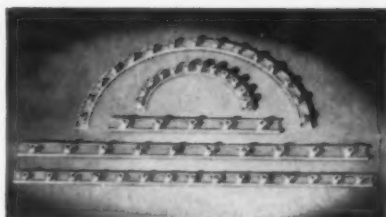
### Electric Counter



The Mercury small electric counter has been adapted for mounting on panels and for built-in applications where flush mounting is advantageous, by Production Instrument Co., 708-14 W. Jackson Blvd., Chicago 6, Ill. The counter is completely enclosed in a tamper-proof metal case with plastic window. Non-resetable, it counts to 99,999 and repeats. Furnished for 6, 24, 30, 115 and 230 volts, 60 cycles, a-c and for 6, 24, 30 and 115 volts d-c. Overall dimensions: 2¾" x 1¾" x 2¼".

No. 111—For further information see page 19

### Gang Channel Nut Strip



A new ESNA gang channel nut strip, to provide permanent fasteners for applications subject to repeated "on-off" usage, has been introduced by Elastic Stop Nut Corp. of America, 2330 Vauxhall Rd., Union, N. J. Blue anodized for easy identification, the channel strip is made of high strength 24S-T4 aluminum alloy. The alloy provides additional strength for unusual assemblies, especially where mis-alignment of sub-assembly components can result in twisted channel strips, or nuts pushed out. The channel strip was designed particularly to promote additional production line economy and to further simplify time-saving, multi-unit installations. The featured nylon locking insert in each nut assures reusability for more than 100 applications.

No. 112—For further information see page 19  
(Please turn to page 129)



## MILFORD FLEXIBLE REZISTOR MEANS LONGER BLADE LIFE

Depend on the MILFORD Flexible REZISTOR to deliver its full cutting life without premature breakage — to last up to ten times longer than standard steel blades. The Flexible REZISTOR is shatter-proof — no flying fragments to injure the operator. Exclusive MILFORD Easy-Starting Teeth start the cut on the first stroke at any angle — prevent jamming by keeping the cut free and clear of chips. Teeth are as hard as those of any power blade; the back is tough and flexible. See your nearby MILFORD Distributor about Flexible REZISTORS today!

This booklet tells you more. Get your copy, and literature on the complete line, from your Milford Distributor today. Or, write direct to the factory — TODAY.



### THE HENRY G. THOMPSON & SON CO.

Saw Specialists Exclusively For Over 70 Years  
NEW HAVEN 5, CONNECTICUT, U.S.A.

Profile and  
Band Saw Blades

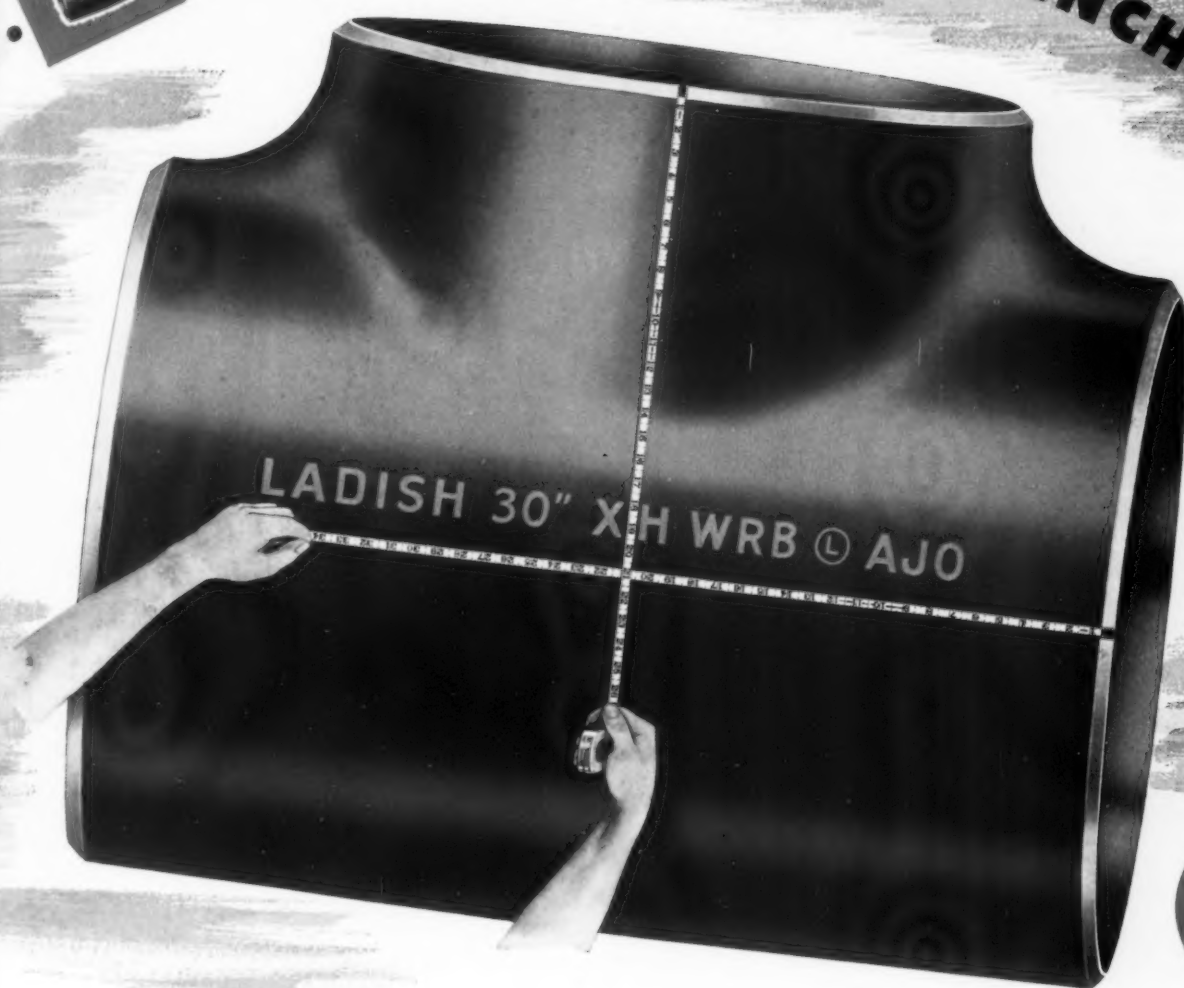


Rezistor & Duplex  
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SOLD THROUGH SELECT INDUSTRIAL DISTRIBUTORS

# Full branch tees

 1/2 INCH THROUGH 30 INCHES



TO MARK PROGRESS

ANOTHER IMPORTANT DEVELOPMENT in the LADISH LINE of

*Controlled Quality*

**FITTINGS**

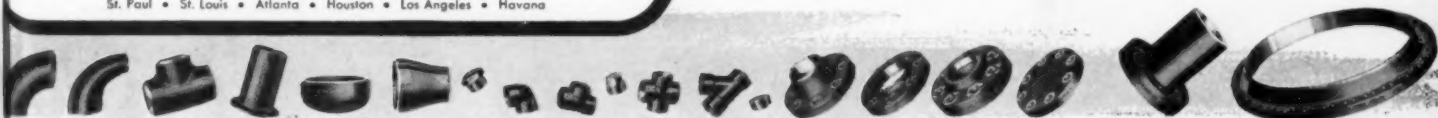
To increase safety, ease of installation and welding accessibility... Ladish Welding Tees have Full Branch Outlets with identical center-to-end dimension of branch and run as is required for each size through 30 inches. Scientific metal distribution... pioneered by Ladish... adds extra protection by equalizing stress over the entire fitting and assuring maximum strength in every cross section.

THE COMPLETE FITTINGS LINE  
PRODUCED UNDER ONE ROOF...ONE RESPONSIBILITY

**LADISH CO.**

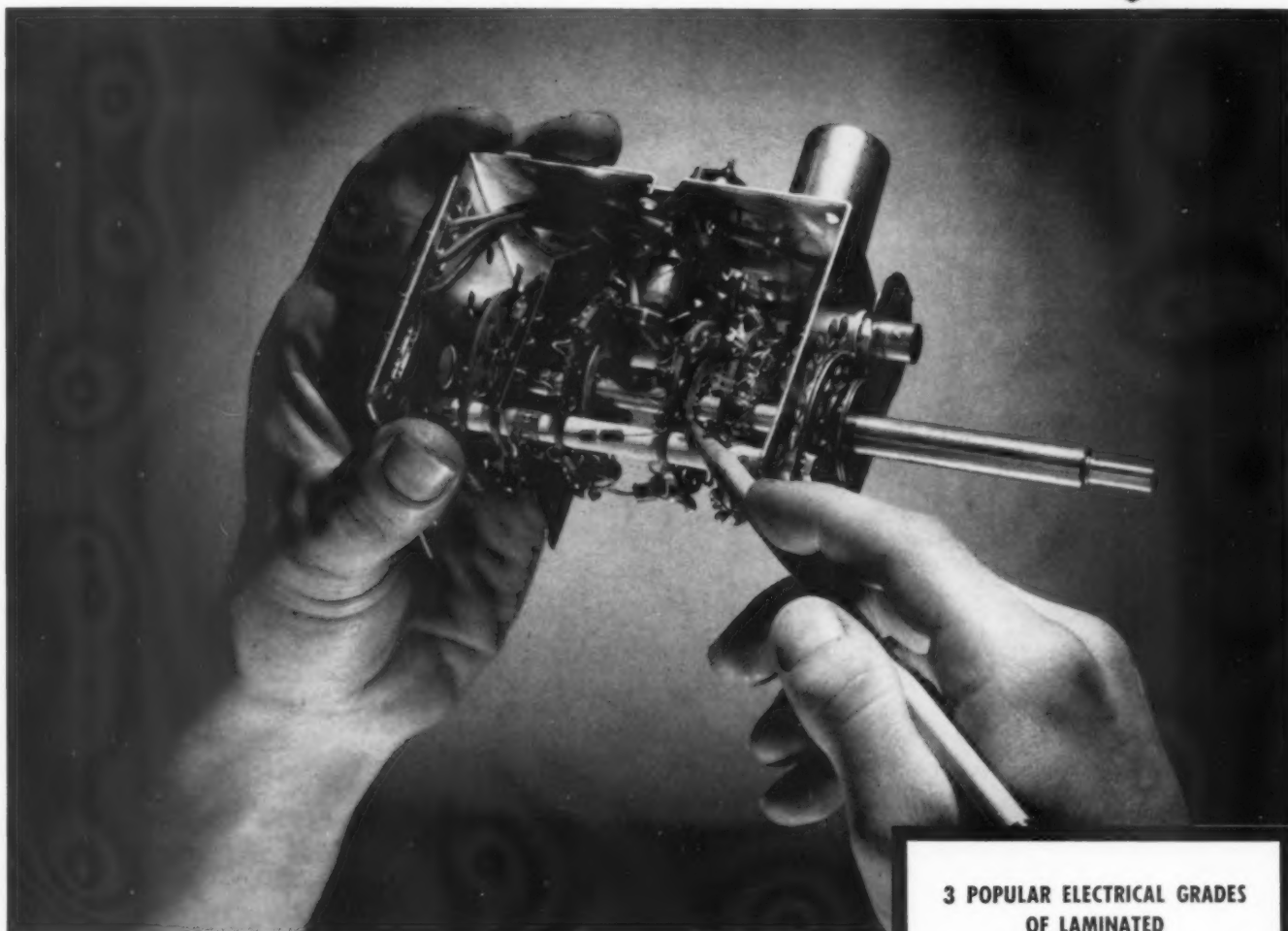
CUDAHY, WISCONSIN  
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DISTRICT OFFICES: New York • Buffalo • Pittsburgh • Philadelphia • Cleveland • Chicago  
St. Paul • St. Louis • Atlanta • Houston • Los Angeles • Havana



**INSUROK**  
T-725

**Retains Its Properties**  
**...even AFTER SANDING**



**That's why it is used in this Tarzian Tuner . . .  
standard in TV sets of 17 leading manufacturers**

Most laminated insulation that can be punched depends largely upon high-resin content surface for the maintenance of its electrical properties under conditions of varying humidity. When sanded to close tolerances, this surface is removed—seriously impairing the electrical behavior of the material.

INSUROK T-725, however, is uniformly top-quality insulation throughout the sheet. Sand it and

it is still better than most unsanded materials.

This is one of the reasons why Oak Manufacturing Company selected INSUROK T-725 for the components it makes for Sarkes Tarzian, who supplies tuning heads to 17 leading TV manufacturers. Investigate INSUROK T-725 for your product. Full information upon request.

*The* **RICHARDSON COMPANY**

FOUNDED IN 1858

2791 Lake St., Melrose Park, Illinois (Chicago District)

**3 POPULAR ELECTRICAL GRADES  
OF LAMINATED**

**INSUROK**

**T-725** An outstanding paper-base laminate that can be hot-punched to intricate shapes. Has excellent electrical and physical properties, is stable under moisture and heat.

**T-800** Has unmatched electrical properties, yet punches with ease. It has a sensational ability to retain these properties in high humidity.

**T-812** A further development in the electrical sheet field with insulation resistance on the order of T-800 and mechanical properties comparable to T-725.

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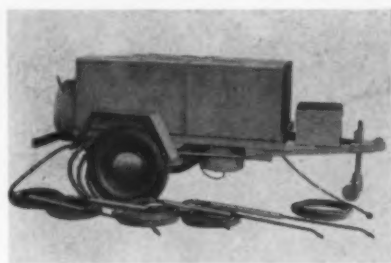
## Micrometer



The L. S. Starrett Co., Athol, Mass. has announced its No. 577 micrometer with rounded anvil with a zero to 1" range. The rounded anvil makes it possible to measure in thousandths of an inch the wall thickness of tubing, half bearings, and full bearings and various cylinders with walls up to 1" thick and diameters all the way down to  $\frac{3}{8}$ " inside diameter. The full finished frame as well as the thimble and sleeve have rust-resistant no-glare Satin Chrome Finish which makes markings stand out sharp, clear and easy to read under any illumination. Convenient decimal equivalents are stamped on the thimble and graduations are quick reading with every thousandth numbered.

No. 113—For further information see page 19

## Steam Cleaner



An all-electric steam cleaner designed especially for use underground or wherever gaseous or explosive mixtures have heretofore made cleaning impractical has been announced by the Hypressure Jenny Division of Homestead Valve Mfg. Co., Coraopolis, Pa. The unit properly mixes a constant amount of water with the desired amount of dissolved cleaning compound, and pumps the mixture through a manifold where it is electrically heated in progressive stages. At 100 to 120 lbs. normal operating pressure, the boiling hot solution and vapor are ejected from the cleaning gun in a powerful 60 gals. per hour blast that cuts, dissolves, and flushes away the heaviest dirt and grease deposits. Literature available.

No. 114—For further information see page 19  
(Please turn to page 130)

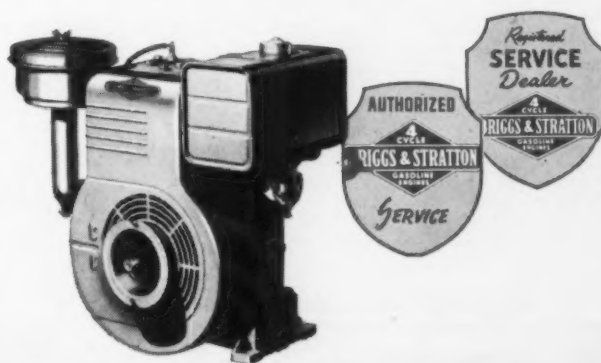


## Through the Largest Network of its Kind in the World

There is a Briggs & Stratton service organization, factory-trained and supervised, near you — with a complete stock of genuine Briggs & Stratton parts for all models.

Briggs & Stratton service is world-wide — and constitutes the largest network of its kind. It is an important part of Briggs & Stratton's continuous effort to make its engines of greatest constant value to their users.

**BRIGGS & STRATTON CORP., Milwaukee 1, Wisconsin, U.S.A.**



**In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.**



**SMALL  
PARTS**

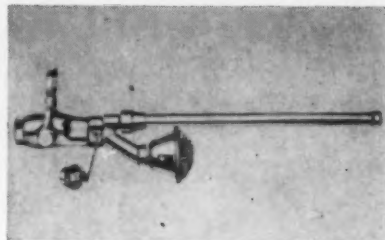
Cost less when made by  
**MULTI-SWAGE**

The economy way to get  
a million small parts  
similar to these —

Examine the tubular and solid metal parts shown here twice size. If you use anything similar . . . in quantities of over a million . . . important savings can be yours. Send us the part and specs. Our quotation will show why the Bead Chain Company's MULTI-SWAGE Process has long been known as the most economical method of making electronic tube contact pins, terminals, jacks and sleeves. And, why more and more users of mechanical parts (up to  $\frac{1}{4}$ " dia. and to 2" length) employ our facilities. WRITE for Data Bulletin.

**THE BEAD CHAIN MANUFACTURING CO.,**  
Tr. Mark 88 MOUNTAIN GROVE ST., BRIDGEPORT 5, CONN.

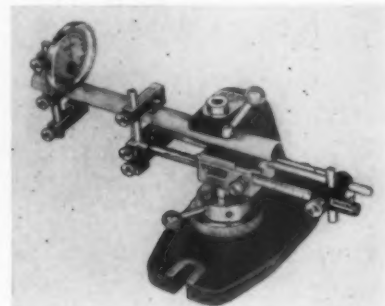
## Fire Fighting Device



Rockwood Sprinkler Co., 38 Harlow St., Worcester 5, Mass., has come up with a new device which can be inserted in its well-known SG-48 WaterFOG nozzle to make 5 different kinds of discharge from the one nozzle. The new extension unit makes the SG-48 an all-purpose nozzle that will handle any type of fire in ordinary combustibles, flammable liquids, or materials that can be extinguished with water alone or water mixed with FOAM liquid. The unit makes possible the following kinds of discharge: high or low velocity Water-FOG, solid water stream, Fog-FOAM or solid FOAM stream. Literature available.

No. 115—For further information see page 19

## Drilling Tool



A universal drilling tool called the Reglus, manufactured in Switzerland, is said to simplify exact drilling of round, flat, square or hexagonal workpieces within an accuracy of .0003". It is distributed here through the Cosa Corporation, Chrysler Bldg., New York 17, N. Y. With accessories, the tool drills holes at predetermined intervals, adjacent holes for making slots, holes at any radial angle, and holes in balls. Automatically centering, the unit eliminates tracing-out and center punching. Primarily a drilling tool, it is described as many tools in one. It is an angle comparator in two planes. It serves as depth gage and a center distance comparator on round, square or hexagonal stock, and it is a miniature jig borer.

No. 116—For further information see page 19  
(Please turn to page 132)

**SELECT A**

# Sterling

**THAT FITS YOUR JOB!**



**TUBULAR  
STEEL FRAME**

(Above)  
Model S-3 Maximum Capacity 3½ cu. ft. 16 gauge tray, all welded, no rivets, double lapped at corners. Steel channel legs. V-shaped front braces and brace support.



**12 SPOKE  
STEEL WHEEL**



**PNEUMATIC  
TIRED WHEEL**



**WOOD HANDLE  
BARROW**

**IMMEDIATE  
SHIPMENT**

**STERLING WHEELBARROW CO., Milwaukee 14, Wis.**




Look for this Mark of  
**STERLING Quality**

# Sterling

## WHEELBARROWS





**...the "near editor's" viewpoint ...**

"Quickies" from a quick trip to France:

Seems to be no immediate prospect of a Communist government in France. "Commies" are a noisy minority, but the average Frenchman is too much of an individualist to be a Communist.

Apparently there is no picketing during strikes in France.

Fashion note: Daytime skirts are short and very tight, belted in at the waist until one wonders how the girls breathe.

Plant of Societe des Produits Houghton in Paris, destroyed by spectacular fire which made U. S. newsreels in 1948, now rebuilt.

*Aaron Carpenter*  
CHAIRMAN OF THE BOARD.

## A Real Saving

An Ohio valve manufacturer was machining stainless steel and brass valve parts in a 5-spindle automatic. He had been using a straight cutting oil, which cost \$67.20 to charge the machine.

He changed to Houghton's Antisept All-Purpose Base, mixed 1 to 30 with water, and costing \$8.00 per machine charge.

**Results:** Saving of \$59.20 per machine, plus faster speeds, plus cooler parts, plus better threads, plus longer tool life.

**Moral:** Try Antisept A-P Base and save five ways.

## Inside Track

Here's why we believe Houghton has the edge on competing manufacturers of hydraulic packings:

First, we make both hydraulic oils and packings; we know they're compatible, know how to impregnate the packings to make them impervious to oil.

Secondly, we make all types of hydraulic packings: leather, fabricated, homogeneous synthetic rubber, including "O" rings. We're neutral... will recommend the best for your particular need.

And finally, our engineering service helps immeasurably in solving packing troubles. We'll suggest better designs, and furnish better packings that last longer. That's why purchasing officials O.K. shop requests for VIM Leather or VIX-SYN packings.



## Eight Lubes Should Be Enough

ONE of our field representatives was taking our lubrication engineer to a medium-sized plant to check over its lubrication requirements, at the request of the plant engineer. The Houghton technical man remarked as they drove up to the plant parking lot that "we can lubricate their machines with probably no more than eight varieties of oil."

"But you haven't seen the inside of the plant yet!" declared the salesman.



"No, but I've seen and surveyed a hundred which are very similar to it," said the lubrication engineer. "Let's park here a minute before going in, and I'll explain. And five will get you ten that's what we'll recommend here, and the brands we offer will do the job better than they may be doing it with at least twice as many varieties. That's been our experience in the past."

"O.K., shoot!"

"Here's what a plant of this type needs," explained the L. E.:

"1. A general purpose grease, such as our Sta-Put 18H. It's a mixed base grease, won't separate nor clog the lines. It combines a high melting point and resistance to water, thus battling for both soda and lime base greases. It's O.K. for automatic lubricants. But it shouldn't be used in electric motors.

"2. For motors, a soda-base pre-worked smooth grease like Absorbed Oil 100 for fractional HPs, No. 200 for multiple HPs.

"3. A general purpose oil. I'd say our Sta-Put 320. It's one of the most-copied oils on the market. But no oil suppliers have combined high film strength and leak resistance the way we have.

"4. A medium gear oil—treated for extreme pressures—like our Vital E.P. Gear Oil SAE 140. If worm gears predominate, our ME Worm Gear Oil can be used instead. It is compounded but not E.P.-treated.

"5. A treated spindle oil of about a 65@100 viscosity, such as our Kensington Spindle Oil No. 7. The extreme-pressure treatment prevents early wear.

"6. A hydraulic oil. There are plenty of them on the market, all making somewhat similar claims, but I'll stand by our Hydro-Drive, a pioneer in treated hydraulic oils, which is fortified for oxidation stability, gum solvency, rust protection and film strength. Usually the MIH Light grade will be most generally used, but as you know, we supply it in all viscosities up to SAE 70.

"7. A headstock lubricant for gear boxes of machine tools. Here I'd advise our

Hydro-Drive MIH-20. It's performing wonderfully for others, both in headstocks and as an air compressor oil. If compressors are air-cooled you'll need a heavier viscosity oil.



"8. An open gear lubricant, something that's tacky, adhesive, yet has plenty of lubricity. We have several such greases; I happen

to prefer Sta-Put 567. Always tell the engineer to clean the teeth well before applying by brush or spray.

"Many plants have some special need which requires a special type lubricant. It may be a high temperature oil, or one which has a very low pour point for a cold condition, or a very bad water condition where only a lime-base grease will function properly. As you know, we have plenty of those special lubes.

"Those first eight, however, should do the average lubrication job and do it better than any combination anyone else can offer. Now let's go in and look over this plant."

*That is the simplest approach to a plant's lubrication needs. After a study of the individual machines and working schedule can be set up which will avoid most of the possibilities of human error. We call this plan the H.E.L.P.—Houghton's Engineered Lubrication Plan. May we discuss it with your man charged with the responsibility for proper lubricant?*

## 20,000 Gal. of Fuel Oil—Free

It may seem hard to believe, but up in Michigan a power company found, after treating its fuel oil with our Houghto-Solv to take tank sludge into solution, that it had 20,000 more gallons of usable fuel oil than showed on their inventory. Dip sticks went 14" deeper into the storage tank, showing that 14" of sludge had been dissolved and made burnable. Have you a sludge problem?

## Antisept All-Purpose Base

Antisept All-Purpose Base—Folder describing water-soluble cutting concentrate which will handle 90% of machine needs.

Hydraulic Oil Handbook—56 pages of basic data on operation of hydraulically operated systems.

Gum Solvent "B"—Folder describing this first-aid treatment of badly gummed machines and hydraulic units.

Hi-Temp Oils—Data Sheet listing complete series for high temperature users.

Houghton on Packings—Four page descriptive folder.

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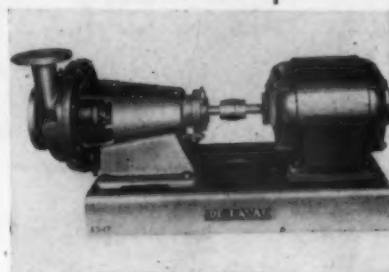
York, Pa., Atlanta, Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.



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*In Business for Your Safety*

## Process Pumps



De Laval Steam Turbine Co., Trenton 2, N. J., has announced its Type CP pumps for general service applications in the process industries that require handling hot or cold clear liquids, viscous liquids, corrosive liquids, or liquids carrying suspended solids. Among operating and maintenance advantages claimed are: to compensate for wear at the impeller face, the entire rotor can be adjusted axially by means of an external adjusting screw; eductor vanes on back of the impeller reduce end thrust, relieve stuffing box pressure, and keep back of the impeller clean when handling liquids with solids in suspension; the gland face is pre-machined and drilled for easy conversion from conventional packing to mechanical seals. Bulletin 1125 available.

No. 117—For further information see page 19

**Like Walking  
on a Cloud**

**The Floor Mat That  
Reduces Fatigue**

**Lam-tex**

**MOLDED RUBBER  
FLOOR MATS**



**Made of Latex Bonded Neoprene-Soft-Porous-Resilient-Tough and Washable, 20x36x 1/2" thick. \$5.75 ea**

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**Do Your  
Zinc Die  
Castings  
Carry this  
Seal?**



When you see this label on a shipment of die castings you know that the contents meet all ASTM specifications. Licensees of the Certified Zinc Alloy Plan are the only die casters who may use this identifying seal.

### Here's How the Buyer Benefits from the Plan

The company who obtains zinc die castings from any of the producers listed below buys with complete confidence. As members of the Certified Zinc Alloy Plan their output is subject to regular sampling and analysis assuring conformance to definite composition limits. That's why an increasing number of manufacturers are selecting their sources of supply from among the die casters listed here.

*(A bulletin describing the Plan is available on request)*

### ONLY THESE DIE CASTERS ARE LICENSED TO USE THE QUALITY CERTIFICATION SEAL

A & A Die Cast and Plastic Molds Co.,  
West Los Angeles, Calif.  
The Accurate Die Casting Co., Cleveland, Ohio  
Advance Pressure Castings, Inc., Brooklyn, N. Y.  
Advance Tool & Die Casting Co., Milwaukee, Wis.

Badger Die Casting Co., Milwaukee, Wis.

Central Die Casting & Mfg. Co., Inc., Chicago, Ill.  
Cleveland Hardware & Forging Co., Cleveland, Ohio  
Congress Drives Division, Tann Corp., Detroit, Mich.  
Continental Die Casting Corp., Detroit, Mich.  
Division of F. L. Jacobs Co.  
Crown City Die Casting Co., Pasadena, Calif.

Doehler-Jarvis Corp., Pottstown, Penna.  
Doehler-Jarvis Corp., Toledo, Ohio  
Doehler-Jarvis Corp., Chicago, Ill.  
Dollin Corporation, Irvington, N. J.  
Du-Wel Metal Products, Inc., Bangor, Mich.

Fanarc Manufacturing Co., Inc., Whittier, Calif.  
Federal Die Casting Co., Chicago, Ill.

Glenvale Products Corporation, Detroit, Mich.

Globe Imperial Corporation, Rockford, Ill.  
C. M. Grey Mfg. Co., East Orange, N. J.

Heick Die Casting Corporation, Chicago, Ill.  
Hilfinger Corporation, Toledo, Ohio  
The Hoover Company, North Canton, Ohio

Kamin Die Casting & Mfg. Co., Chicago, Ill.  
Kiowa Corporation, Marshalltown, Iowa  
Paul Krone Die Casting Co., Chicago, Ill.

Madison-Kipp Corporation, Madison, Wis.  
Milwaukee Die Casting Co., Milwaukee, Wis.  
Modern Die Casting Corp., Chicago, Ill.  
Monarch Aluminum Mfg. Co., Cleveland, Ohio  
Mt. Vernon Die Casting Corp., Mt. Vernon, N. Y.

New Products Corp., Benton Harbor, Mich.

Paragon Die Casting Co., Chicago, Ill.  
Parker White Metal Co., Erie, Penna.  
Peckinpaugh Metals Corp., Cleveland, Ohio  
Precision Castings Co., Inc., Syracuse, N. Y.  
Precision Castings Co., Inc., Cleveland, Ohio

Precision Castings Co., Inc., Reed Metal  
Crafts Division, Chicago, Ill.  
Pressure Castings, Inc., Cleveland, Ohio

Racine Die Casting Co., Racine, Wis.

St. Louis Die Casting Corp., St. Louis, Mo.  
Schultz Die Casting Co., Toledo, Ohio  
Sterling Die Casting Co., Inc., Brooklyn, N. Y.  
Stewart Die Casting Div. of Stewart Warner Corp.,  
Bridgeport, Conn.

Stewart Die Casting Division of Stewart Warner Corp.,  
Chicago, Ill.

Stroh Die Moulded Casting Co., Milwaukee, Wis.

The Superior Die Casting Co., Cleveland, O.  
The Tool-Die Engineering Co., Cleveland, Ohio  
Twin City Die Casting Co., Minneapolis, Minn.

Union Die Casting Co., Ltd., Los Angeles, Calif.  
Universal Die Casting Co., Los Angeles, Calif.

Wells Die Casting Co., San Francisco, Calif.  
Western Die Casting Co., Emeryville, Calif.

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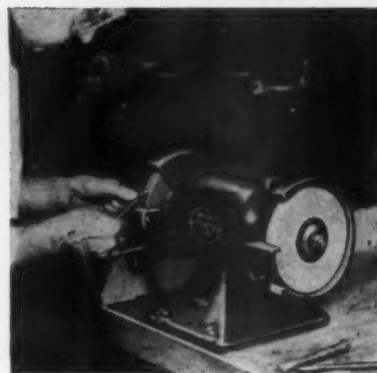


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## Bench Grinders



Extra-large work clearance is featured in a new line of bench grinders announced by Skilsaw, Inc., 5033 Elston Ave., Chicago 30, Ill. They are designed to permit easy handling of large and bulky pieces and allow more accessibility to grinding wheels. The  $\frac{1}{4}$  and  $\frac{1}{3}$  hp grinders are "flat-faced" to provide full clearance for difficult jobs. The  $\frac{1}{2}$  and 1 hp grinders have compact motors which also give the worker more room for grinding bulky objects. Heavy duty cast wheel guards are easily removed for buffing and polishing. Tool rests can also be removed and are adjustable for grinding wheel wear. Available in 6" wheels,  $\frac{1}{4}$  hp; 6",  $\frac{1}{3}$  hp; 7",  $\frac{1}{2}$  hp; and 10", 1 hp.

No. 118—For further information see page 19

## "Shop-on-Wheels"



A large size Roll-Cab for industrial use that can be rolled to the job carrying all necessary tools, equipment and material provides a time-saving "shop-on-wheels" according to Snap-on-Tools Corp., Kenosha, Wis. The top measures 45" x 24" to give plenty of working space. For a rigid work surface capable of mounting a vise or bench grinder, a reinforced solid steel top plate approximately  $\frac{3}{16}$ " thick is used with a cemented pressed hard- (Please turn to page 136)

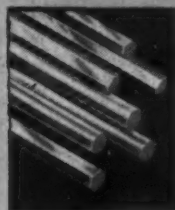




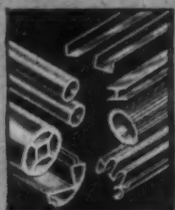
Pig, Ingot,  
Extrusion Ingot



Wire, Rod  
and Bar



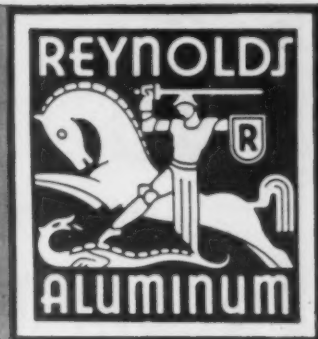
Screw Machine  
Stock



Extrusions,  
Structural



Coil, Sheet, Plate  
Plain and Embossed



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quality and sales appeal of your products. And you get three times the metal in every pound. Savings in fabrication, finishing and shipping are frequently possible too. Get acquainted with your dependable Reynolds Distributor. Let him show you how aluminum can save you money, serve you better.

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Southern States Iron Roofing Co.,  
Birmingham

### ARIZONA

Smith Pipe & Steel Co., Phoenix

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Huntington Park (L.A.)

Clingen & Forlier, Inc.,  
San Francisco

W. F. Heine Supply Co., (Architectural  
Shapes) Oakland

Richard G. Stern & Co.,  
Los Angeles

Tay-Hallbrook, Inc.,  
San Francisco

Union Hardware & Metal Co.,  
Los Angeles

United States Steel Supply Co.,  
Los Angeles and San Francisco

Western Metal Supply Company,  
San Diego

### COLORADO

Marsh Steel Corporation,  
Colorado Springs and Denver

### CONNECTICUT

American Steel & Alloys Corp., Hartford

### FLORIDA

Horne-Wilson, Inc., Jacksonville,  
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Southern States Iron Roofing Co.,  
Jacksonville, Orlando and Tampa

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### ILLINOIS

Silverstein & Pinsof Inc., (Ingots only)  
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Benjamin Wolff & Co., Chicago

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Indianapolis

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Naill-LaVielle Supply Co., Louisville

### LOUISIANA

Southern States Iron Roofing Co.,  
New Orleans

### MARYLAND

Clendenin Bros., Inc., (Wire, rod, bar,  
structurals) Baltimore

Lyon, Conklin & Co., Inc., Baltimore

United States Steel Supply Co.,  
Baltimore

### MASSACHUSETTS

Bay State Refining Co., (Ingots only)  
Chicago Falls

Arthur C. Harvey Company, Boston

Pratt & Inman, (Wire, rod, bar,  
structurals) Worcester

### MICHIGAN

Kaslo Steel Corporation, Detroit

Milton A. Meier Co., (Ingots only) Detroit

### MINNESOTA

Newell T. Minor Company, St. Paul

United States Steel Supply Co., St. Paul

### MISSISSIPPI

Southern States Iron Roofing Co.,  
Hattiesburg

### MISSOURI

Brass & Copper Sales Co.,  
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Marsh Steel Corporation,  
N. Kansas City

### NEW JERSEY

Edgcomb Steel Corporation, Hillside

### NEW YORK

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Buffalo

Edgcomb Steel Corporation,  
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Raleigh

### OHIO

The Atlas Metal Co., (Ingots only)  
Cleveland

Hamilton Steel Company, Cleveland

Mutual Manufacturing & Supply Co.,  
Cincinnati

### OREGON

American Steel Warehouse Co.,  
Portland

### PENNSYLVANIA

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Colonial Smelting & Refining Co.,  
(Ingots only) Columbia

Levinson Steel Sales Company,  
Pittsburgh

Merchant & Evans Co., Philadelphia

Potts-Farrington Company,  
Philadelphia

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Southern States Iron Roofing Co.,  
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### TENNESSEE

Southern States Iron Roofing Co.,  
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### TEXAS

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*The Reamer Specialists*  
**LAVALLEE & IDE, INC.**  
CHICOPEE, MASS.

(Continued from page 134)

wood covering. The Roll-cab is constructed of heavy gage steel and is spot welded throughout for strength and rigidity, and to eliminate projections that catch or tear clothing. Drawers and compartments can be locked when not in use.

No. 119—For further information see page 19

### Pallet Truck

A new 12- or 18-volt pallet truck, announced by The Moto-Truc Co., 1953 E. 59th St., Cleveland, O., also introduces an automotive-type, internal expanding brake now being made standard on all Moto-Truc models. For the first time in trucks of this type, the company states, the brake is mounted on the side of the drive wheel as an integral part. Op-



erating safety is increased by elimination of excessive strain and wear on chains, shafts, etc. when mounted elsewhere. The truck itself is only 23 3/4" longer than the load, for operating in smaller spaces. Easy-grip, roller-type handle controls two speeds forward and reverse.

No. 120—For further information see page 19

### Fire Fighting System

American - LaFrance - Foamite Corp., Elmira, N. Y., has developed a new system for protecting flammable liquid tanks and other fire-susceptible installations, featuring Foamite-Airfoam, a stable, cohesive, free-flowing, protein base foam fire extinguishing agent. Each system is engineered to suit the individual needs of a particular risk. The system is designed for the correct mixing of Foamite Airfoam liquid, water, and air, to produce ten gallons of Foamite Airfoam for each gallon of 6% solution. The mixture blankets fire with a thick, stable insulation which cuts off flame-supporting oxygen and smothers the blaze. It extinguishes fires both in ordinary free-burning materials and in combustible liquids. Literature available on both portable units and fixed systems.

No. 121—For further information see page 19  
(Please turn to page 141)



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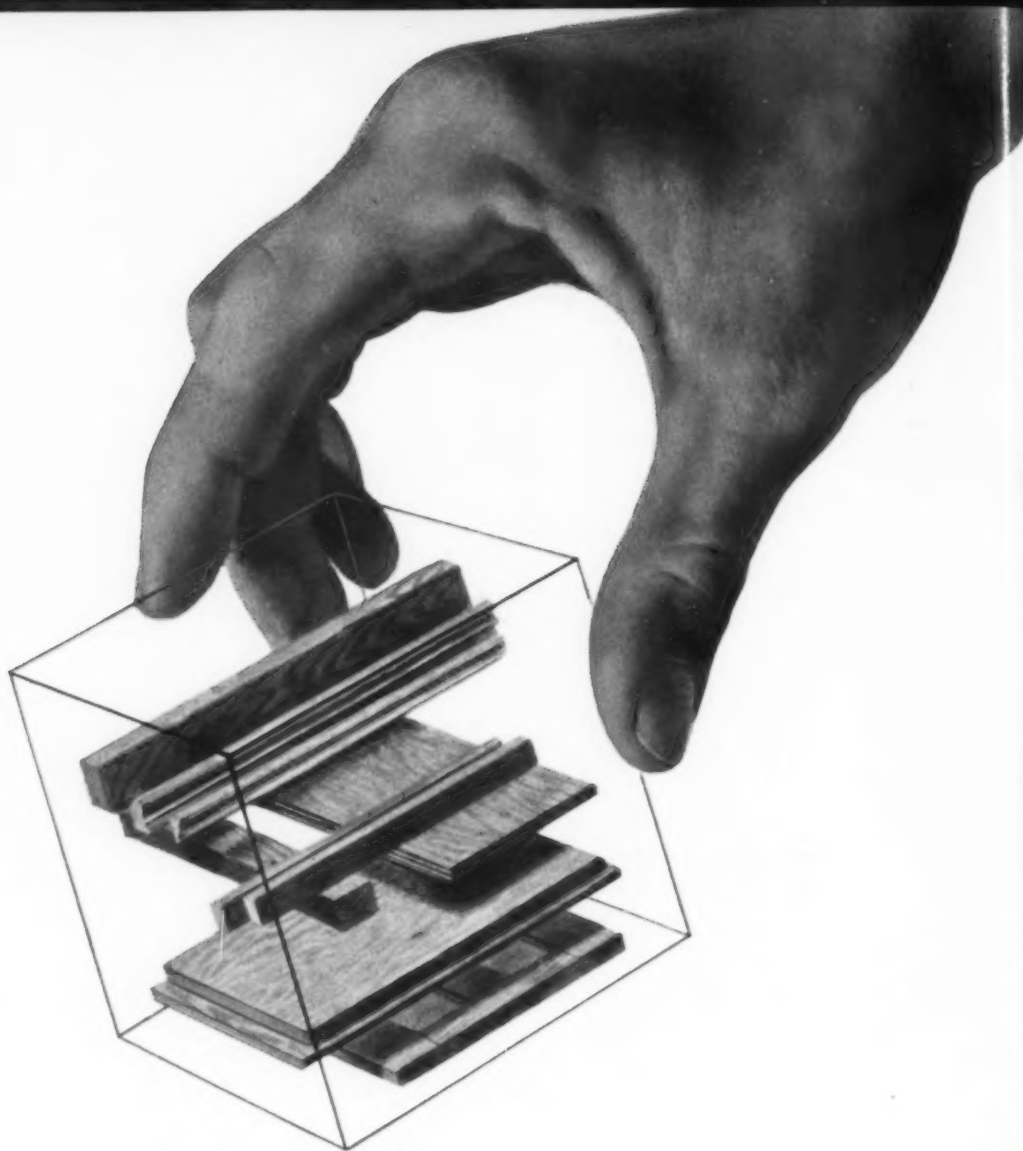
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... a new "dimension"





## ... a new "dimension" ...

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We're not talking about 2 x 4's. There's a bigger "dimension" you ought to know about. It stretches from the timbered lands of the South to the forests of the Pacific Northwest . . . it's Georgia-Pacific's new kind of *service*, geared to help you buy more economically, more efficiently.

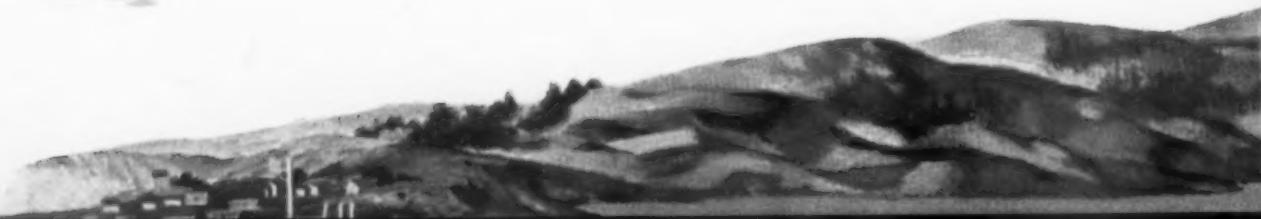
Georgia-Pacific, with modern mills strategically

located throughout the South and Pacific Northwest, can offer you every *type, species* and *grade* of plywood and lumber you need . . . *quality controlled* every step of the way from the forest to your factory.

The booklet and analysis form shown below tell how coordinated buying from Georgia-Pacific can cut your costs . . . improve your production and purchasing efficiency.



This 20-page booklet "A New Dimension" and the 4-page Problem Analysis Data Form will prove invaluable in re-examining your lumber and plywood needs . . . Send for your copies today. Write Georgia-Pacific Plywood & Lumber Co., Southern Finance Building, Augusta, Georgia.



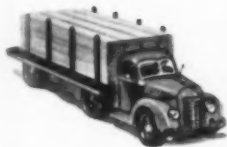
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**2. Oversize Plywood Panels.** Literally "a new dimension" in plywood is the 10x72 foot scarfed panel shown. Available in any length, they are saving time and labor in many industrial and marine uses. Write for details.



**3. Planned Carload Deliveries**—or emergency shipments from G-P warehouses in Boston, Newark, Philadelphia and Chicago—to match your production schedules . . . enable you to operate safely on smaller inventory at less cost.



**4. Complete Quality Control.** From the forest to your factory, assures you maximum quality in every grade . . . more value for every dollar.



**5. Modern Loading Methods** to simplify your handling and storage problem plus "wood know-how" to aid you in the selection of the right *species, grade, and size*, for every use.



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**Chicago**—332 South Michigan Ave., Tel. HArrison 7-5466  
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Western Pine Lumber  
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Western and Southern Mouldings  
Southern and Appalachian Hardwood Lumber  
Long Leaf and Short Leaf Pine Lumber and Timber  
Residential and Factory Flooring  
Treated Lumber and Timbers  
Poles and Piling



## Portable Greasing Unit



Two models of a portable "one-man-one-hand operated greasing outfit" for industrial, automotive, or farm use, have been announced by the Alemite division of Stewart-Warner Corp., 1826 Diversey Pkwy., Chicago 14, Ill. Model 7185-A, called the "Dyn-O-Luber", is equipped with a "Dyn-O-Mite" gun which weighs only 2 lbs. and greases up to 55 bearings. Model 7185-B, the "Dyn-O-Pistol", comes with a gun of 9-oz. capacity. Alemite says use of detachable guns for actual delivery of grease to the lubricant fittings, with refilling of guns requiring but a few strokes of the loader pump, has eliminated transfer of lubricant, increased utility of the outfit in servicing all bearings, and preserved advantages of high pressure delivery.

No. 122—For further information see page 19

## Pillow Blocks



Lubralife permanently lubricated, self-aligning pillow blocks are manufactured in  $\frac{1}{2}$ ",  $\frac{5}{8}$ ",  $\frac{3}{4}$ " and 1" bore sizes by Congress Drives Divn., Tann Corp., 3750 E. Outer Dr., Detroit 34, Mich. Special process and construction eliminates necessity for relubrication or maintenance throughout life of the pillow block. There is never any dripping of oil. Lubricant forms a thin protective coating around the shaft and eliminates freezing even under most adverse operating conditions, the company states. Floating ball and socket construction assures perfect alignment. Available in both pillow block and flange mountings.

No. 123—For further information see page 19  
(Please turn to page 142)

**PRODUCE** } **PRODUCTION STOPPAGES**  
**REJECTS**  
**FINISHING COSTS**

*with*

## WALLINGFORD *Custom-Tailored* STRIP STEEL

Wallingford steel is cold processed to meet your most exacting requirements. Precision rolling and slitting, with the latest equipment, provides you with your specified width and thickness tolerances every inch of the way. With this Wallingford custom-tailored strip you obtain uniform fabrication characteristics; eliminate costly production stoppages and high rejects; improve your profit picture.

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**STAINLESS STRIP** — Up to 24" in all grades. Bright Annealed 18-8 — To 15" wide — From .005 gage. Mirror-like surface materially reduces finishing costs.

**HIGH AND LOW CARBON STRIP AND COIL** — Closer gage tolerances mean fabrication of more finished parts per hundred pounds of steel.

**RESISTANCE WELDED TUBING** — From strip to tube, every inch a Wallingford Quality Controlled product.

**INVESTIGATE WALLINGFORD'S PRODUCTS TODAY. AN INQUIRY ON YOUR COMPANY LETTERHEAD WILL BE PROMPTLY ACKNOWLEDGED.**

## THE WALLINGFORD STEEL CO.

WALLINGFORD, CONNECTICUT, U.S.A.

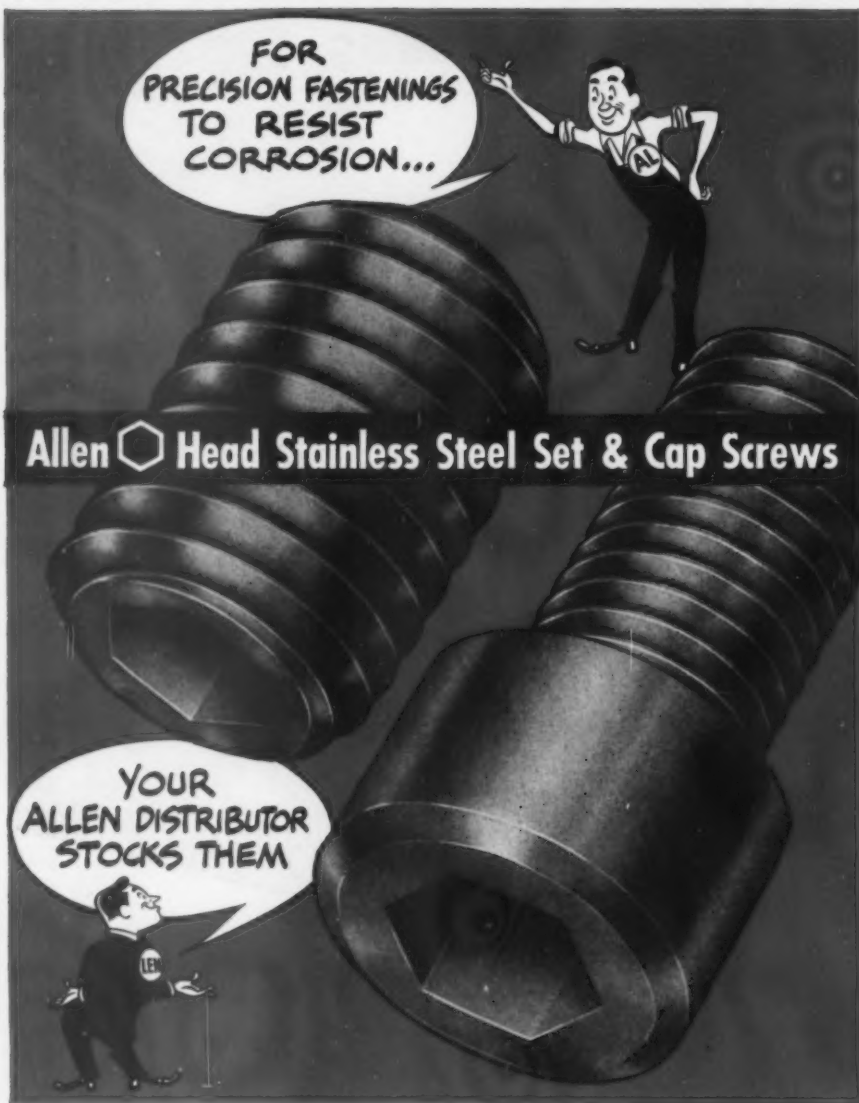
LOW CARBON • HIGH CARBON  
ALLOY • STAINLESS • STRIP and TUBING



FOR  
PRECISION FASTENINGS  
TO RESIST  
CORROSION...


Allen  Head Stainless Steel Set & Cap Screws


YOUR  
ALLEN DISTRIBUTOR  
STOCKS THEM



When you need a combination of strength and resistance to most acids, alkalis or other corrosive substances, use stainless steel.

When you require stainless steel cap or set screws, your Allen Distributor has the most complete line . . . over seventy sizes that are standard.

You get the convenience of prompt delivery plus the regular Allen  Head advantages of strength, fine finish, strong sockets and the smooth threading made possible by Allen 100% Pressur-forming. Sold only through leading

distributors. Write for complete information on the Allen  Head stainless steel line.

#### QUICK FACTS ABOUT STANDARD ALLEN HEAD STAINLESS SCREWS

Made of 18-S stainless steel NC threaded. (No. 10 NF also standard).

Set Screws in popular sizes from No. 6,  $\frac{3}{16}$ " length to  $\frac{1}{2}$ " x  $\frac{3}{4}$ ". Cup points.

Cap Screws in popular sizes from No. 8,  $\frac{3}{8}$ " length under head, to  $\frac{1}{2}$ " x 2" under head. Other threads, points and types of stainless steel available on special order.



**ALLEN**   
MANUFACTURING COMPANY  
Hartford 2, Connecticut, U. S. A.  
NEW YORK, CLEVELAND, DETROIT, CHICAGO, LOS ANGELES

FOR 40 YEARS THE BUY-WORD FOR SOCKET SCREWS

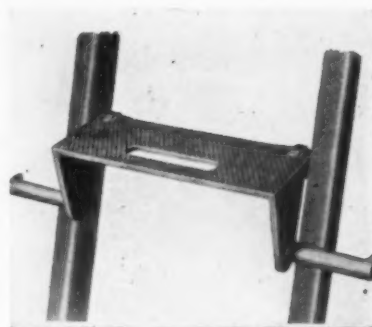
#### All-Purpose Lubricant



Plastilube, a new all-purpose lubricant which has no melting point is the latest development of The Warren Refining & Chemical Co., 750 Prospect Ave., Cleveland 15, O. The lubricant contains no metallic soaps or fatty acids. Above are shown barium grease (left), lithium grease (center) and Plastilube on a hot plate with a temperature reading of 345F, with the Plastilube the only one unaffected by the heat. Warren says the lubricant has great adhesive qualities, excellent pumpability at low temperatures and does not break down during working. It is said to be adaptable for virtually every automotive and industrial use.

No. 124—For further information see page 19

#### Ladder Rest



As an aid to maintenance men, painters, electricians, etc., Res-tep, Inc., 1340 E. 222nd St., Euclid 17, O., is marketing a portable, easily-handled ladder platform that attaches to any round ladder rung and is quickly changed from rung to rung. Of aluminum permanent mold construction, it weighs about 4 lbs. Tensile strength is 25,000 psi. The majority of weight applies to ladder uprights, not on the rungs. The step surface is 12" wide by 5" deep, and has a deep diamond tread to keep feet from slipping. The platform can be used on double extension ladders.

No. 125—For further information see page 19  
(Please turn to page 144)

# COPPER ALLOY BULLETIN

REPORTING NEWS AND TECHNICAL DEVELOPMENTS OF COPPER AND COPPER-BASE ALLOYS

Prepared Each Month by BRIDGEPORT BRASS COMPANY "Bridgeport" Headquarters for BRASS, BRONZE and COPPER

## Galling Reduced, Strength Raised Through Duronze III Valve Stems

Failure of main cargo or cargo stripping valves aboard a tanker can prove exceptionally costly either through contamination of a cargo or through maintenance expense, plus loss of time.

Sometime ago, in an effort to increase the strength and reduce galling in these suction valves, Mechanical Marine Co., Inc., New York, New York, changed from bronze to silicon aluminum bronze (Duronze III) for valve stems.

When two clean metal surfaces are rubbed together under heavy pressure, galling may take place between the two mating materials. Once this condition starts, it progresses rapidly with each operation. Seizure eventually takes place.

### Wear Reduced

Duronze III often reduces wear galling to a low point when mated with other metals. It has a hardness of B85 Rockwell and provides an excellent bearing surface in slow turning gears and screws where heavy loads are involved.

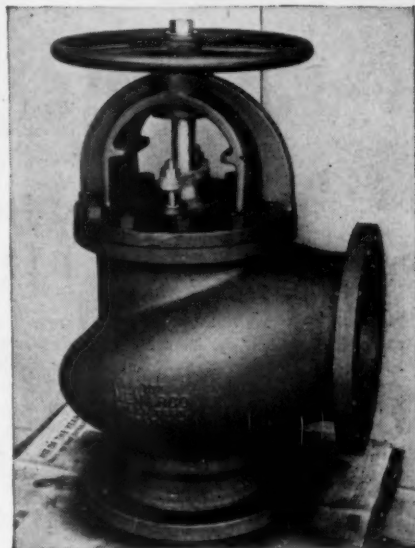
High strength is needed in this type of valve stem as often deposits produced through changing from one cargo

to another and the introduction of sea water for ballast cause them to stick. In such an event, lever bars are often used on the valve wheel to open or close them. This increased load may cause ordinary bronze stems to distort or twist off. Duronze III has a tensile strength of 85,000 psi in the annealed state. This is considerably higher than the ordinary cast bronze alloys.

The main cargo valve stem is about 2 feet long. It is turned for 13" from 2" rod to 1 3/4" for the modified Acme thread with a five pitch. The threads are milled. A smaller diameter is turned for the wheel nut and a bevelled square is milled to take the wheel.

### Good Machinability

Despite its exceptionally high tensile strength and intrinsic hardness, Duronze III machines with a brittle, easily broken chip similar to the leaded screw machine alloys. With a machinability rating of around 60, it is possible to obtain surface speeds between 150 and 250 fpm with high speed steels and even greater ones with carbide.



10-inch main cargo suction valve. Courtesy Mechanical Marine Co., Inc.

High finishes are possible with moderate feeds despite the turning speeds used. Because the chip breaks away so readily, milling of the thread as well as turning of this alloy is done with less trouble and higher speeds than are possible to obtain with other bronzes.

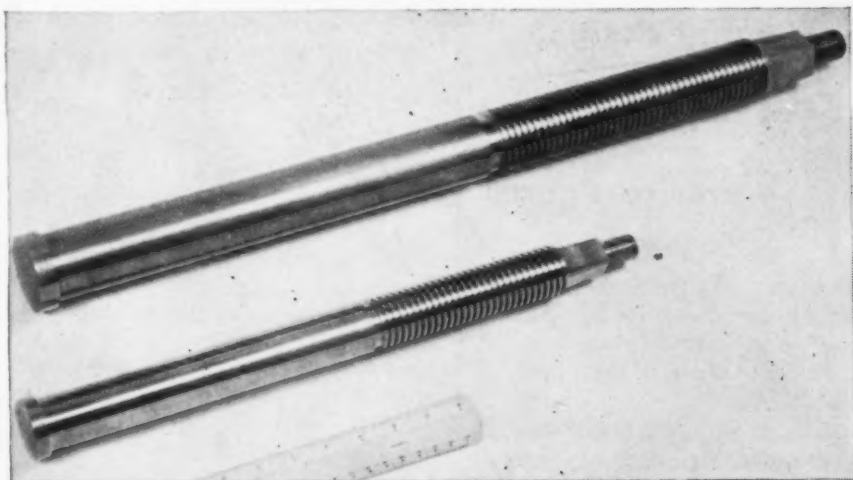
Minimum rake and clearance angles are used for the best results. This gives the cutting edge longer life on both turning tools and milling cutters.

### Over-Loading Dangers Lessened

When using Duronze, its high strength permits considerable overloading without failure and the good finishes obtained make for smoother mating.

Duronze III has been successfully used as stems on steam, water and other types of liquid valves, including air. Not only does it minimize galling, increase strength and permit smoother action, but it also has a high resistance to corrosion from liquids and semi-solids including oils, syrups, tars, etc.

When considering changes in metal specifications to improve your product through longer life and better operational characteristics or for more economical production, Bridgeport's laboratory is prepared to work with engineers and product designers. Call or write our nearest district office.



Duronze III valve stems for 10-inch and 6-inch main cargo and cargo stripping valves. Courtesy, Mechanical Marine Company, Inc., New York, New York.

BRASS • BRONZE • COPPER • DURONZE — STRIP • ROD • WIRE • TUBING

MILLS IN  
BRIDGEPORT, CONNECTICUT  
INDIANAPOLIS, INDIANA

In Canada:  
Noranda Copper and Brass Limited,  
Montreal



BRIDGEPORT BRASS

BRIDGEPORT BRASS COMPANY  
BRIDGEPORT 2, CONNECTICUT

Established 1865

"Bridgeport" District Offices and Warehouses in Principal Cities





## Save Money by Buying Your SCREW MACHINE PARTS from KEMPSMITH

Now — You can get high-quality screw machine parts from a reliable manufacturer at a substantial saving. In the modern, well-equipped Kemp Smith plant, you will find a battery of six spindle automatics from 9/16" to 3 1/2" diameter and single spindle machines from 9/16" to 5 1/4" diameter. Also plenty of hobbing, splining, broaching and other second operation equipment. These high-speed, precision machines are available to YOU for producing your screw machine parts. They enable you to get costs down to meet competitive bids. All metals can be processed. Send us your blueprints. Our quotation will follow immediately.

KEMPSMITH MACHINE CO., 1863 S. 71st ST., MILWAUKEE 14, WIS., U. S. A.

# KEMPSMITH

Supplying the Needs of Industry Since 1888

## NAMEPLATES



- any design
- any quantity
- precise figures

Whatever type, size, or quantity of nameplate you desire, take advantage of our long experience and new facilities.

We can supply etched or lithographed nameplates to your specifications, in aluminum, copper, steel, stainless steel—finished in lacquer, nickel, chromium, or silver. In addition to nameplates with all the customary kinds of black or colored markings, we can supply self-luminous, fluorescent, or phosphorescent nameplates.

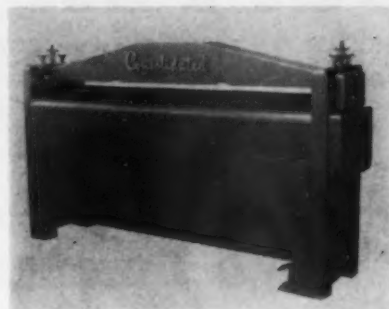
This company has been making

instrument and timepiece dials for many years and applies its characteristic care to nameplate manufacture as well. We are equipped to produce either large-quantity runs of ordinary nameplates or small runs of special high-accuracy scientific nameplates.

Get our quotation on your present nameplate. Possibly we can improve its design and save you money!

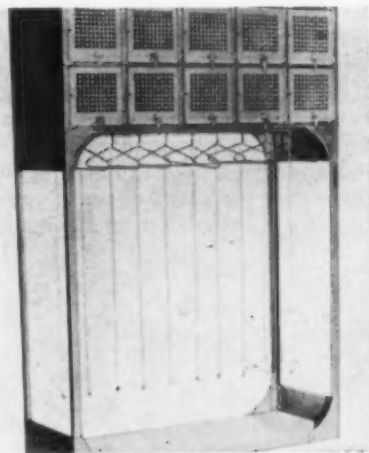
Write Dept. M, United States Radium Corporation, 535 Pearl Street, New York 7, N. Y.

## Straightening Machine



A new machine for straightening, rolling, or form rolling of sheet stainless steel, aluminum, zinc, copper, cold rolled and hot rolled steel, etc., has been introduced by Consolidated Equipment Co., 2186 W. Wabansia Ave., Chicago 47, Ill. It is made in three sizes for sheets up to 18-gage and up to 36", 60" and 72" wide. Adjustment is quickly made for different materials and types of rolling. The machine is equipped with a variable speed transmission to permit synchronizing the speed for production work. No. 126—For further information see page 19

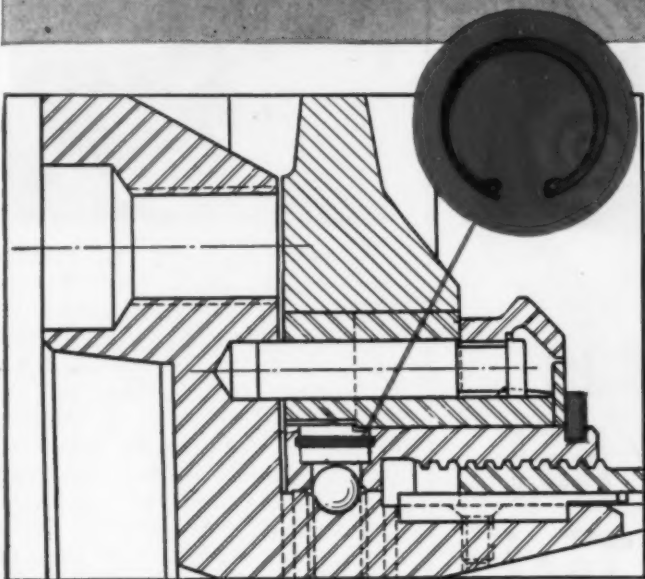
## Locker Rack



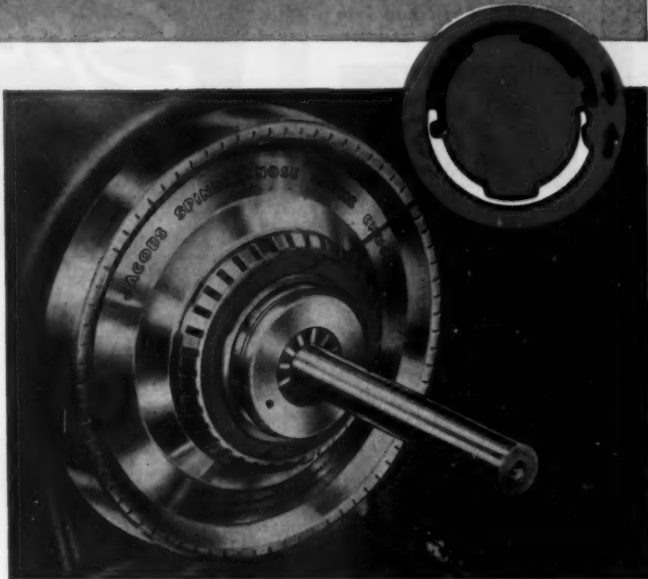
Lyon Metal Products, Inc., Aurora, Ill., has announced a new economy locker rack for applications where floor space is limited and low cost is a prime requisite. With dimensions of 50" wide, 18" deep, 76" high, it offers clothes storage for 10 persons in minimum floor area. Each of 10 compartment doors is equipped with built-in lock with two keys. Door clearance is 8 7/8" x 8 5/8". Doors are hinged at the top so that they drop shut. Locking the door secures the coat. Chain drops through coat sleeve and is locked with the door. Raised space keeps clothing and overshoes out of sweeper's way. No. 127—For further information see page 19

(Please turn to page 146)

# 2 Waldes Truarc Rings Save Space ...cut costs...Lock entire chuck



**INTERNAL RING:** Used instead of a shoulder screw, Truarc internal ring #5000-37 locks disc over ball loading hole. Saves 1/8 inch in overall diameter. Eliminates tapping. Withstands machine vibration and vibration from impact device within chuck. Used with Truarc pliers, it facilitates assembly and disassembly.



**INTERLOCKING RING:** Used instead of a locknut, Truarc interlocking ring #5107-343 locks handwheel assembly securely on impact sleeve of Jacobs chuck. Saves 7/32 inch in overall length. Eliminates tapping. Chuck's top speed: 5000 RPM; Truarc ring is dynamically balanced to withstand 50,000 RPM's. Services easily with a screwdriver.

2 Waldes Truarc Retaining Rings secure the entire mechanism of new spindle nose lathe chuck for Jacobs Mfg. Co., Hartford, Conn. Truarc gives Jacobs a finer, more compact product, and at lower cost than possible with any other fastening device.

Wherever you use machined shoulders, nuts, bolts, snap rings, cotter pins, there's a Truarc Ring that does a better job of holding parts together.

Truarc Rings are precision-engineered. Quick and easy to assemble, disassemble. Always circular to give a never-failing grip. They can be used over and over again.

Find out what Truarc Rings can do for you. Send your drawings to Waldes Truarc Engineers for individual attention, without obligation.

## 2 TRUARC RINGS GIVE 6 BIG ADVANTAGES

- Cut overall length 7/32 in.
- Cut overall diameter 1/8 in.
- Eliminate cost of tapping
- Withstand up to 50,000 RPM's, give a factor of assurance of 10
- Withstand machine vibration
- Facilitate assembly, disassembly



**WALDES  
TRUARC**

REG. U. S. PAT. OFF.

**RETAINING RINGS**

WALDES KOHINOOR, INC., LONG ISLAND CITY 1, NEW YORK

WALDES TRUARC RETAINING RINGS ARE PROTECTED BY U. S. PATS. 2,305,948; 2,026,454; 2,416,952 AND OTHER PATS. PEND.



Waldes Kohinoor, Inc., 47-16 Austel Place  
Long Island City 1, N. Y.

F072

Please send 28-page Data Book on Waldes Truarc Retaining Rings.

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Business Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_





Tufts hand stitched into block cannot become loose.



Handle is easily adjustable to height of sweeper.



Steel bolt in handle prevents thread wear.



Long tufts give longer wear.

# See Why

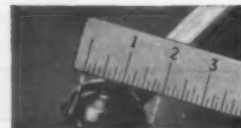
# Speed Sweep

# Is American Industry's No. 1 Sweeping Tool

The brush with the steel back



Steel back prevents splitting and chipping of block.



Tuft arrangement in narrow block provides "spring and snap."



**MILWAUKEE DUSTLESS BRUSH CO.**  
530 N. 22nd Street • Milwaukee 3, Wis.

## Arc Welding Electrode



A new improved arc-welding electrode, the W-52 (AWS Class E7010) a reverse polarity d-c rod, has been introduced by the Welding Divisions of General Electric's Apparatus Dept., Schenectady 5, N. Y. The electrode is available in  $\frac{3}{32}$ " and  $\frac{1}{16}$ " diameters for field trial. This carbon-molybdenum electrode is specifically designed for high-quality welding of low-alloy, high-tensile steels, such as pipe lines, in all positions. It can be widely applied in the welding of high-pressure piping and of castings where high tensile strength and resistance to creep at high pressures and temperatures are desired. G. E. says the stable arc of the new W-52 with low spatter lends for smooth operation and eliminates tendencies to short out in confined joint preparations.

No. 128—For further information see page 19

## Also Noted . . .

A cleaning solution for personal safety equipment that combines the best properties of both a germicide and detergent has been introduced by American Optical Company, Southbridge, Mass. It removes dirt and skin oils from goggles, respirators, helmets, etc.

No. 129—For further information see page 19

Aluminum plastic coating which gives an opaque surface that also resists moisture, light acids, dilute alcohols and many other chemicals, is available in a self-contained spray dispenser from Krylon, Inc., 2601 N. Broad St., Philadelphia 32, Pa.

No. 130—For further information see page 19

Simonds Saw and Steel Co., Fitchburg, Mass., is now packaging its well-known "Red Tang" files in a distinctive all-red box with special top and end labels for easier identification.

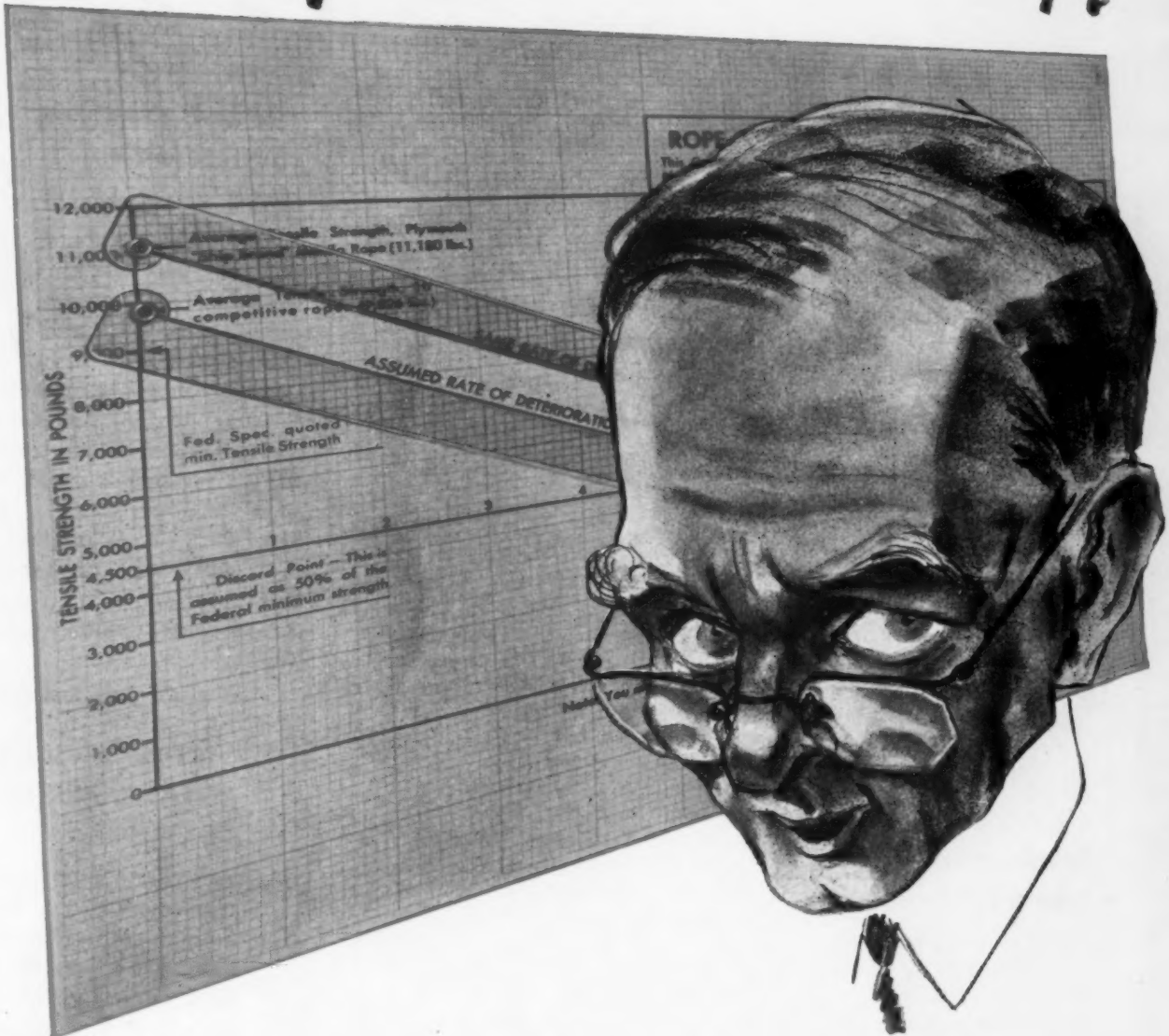
No. 131—For further information see page 19

(Please turn to page 148)



"Remember me? A few months ago I said 'Why shouldn't I buy rope on price?'"

# "I can't buy any rope that cheap!"



... that's what you'll say, too, when you look at Plymouth's cost-of-service chart and figure how ridiculously cheap you'd have to buy rope in order to match Plymouth SHIP BRAND's low month-to-month cost. This chart proves that SHIP BRAND Manila is so much stronger, thus lasts so much longer, it's by far the most economical to *use*—even though it may cost you a few cents more per pound to buy. And don't forget that SHIP BRAND's extra margin of strength and service also means an extra margin of *safety* every minute of its longer life.

PLYMOUTH CORDAGE COMPANY, PLYMOUTH, MASSACHUSETTS

## SEND FOR FREE CHART

—see proof of Plymouth's longer life and operating economy—figure how much less you'd have to pay for other ropes to match Plymouth's low cost of service. A post card brings your free copy—a modified reproduction of the one shown above.

**PLYMOUTH**  
*Cordage Products*



**THE ROPE YOU CAN TRUST BECAUSE IT'S ENGINEERED FOR YOUR JOB**

# PAGE WIRE

LOW CARBON  
HIGH CARBON  
STAINLESS  
SPECIAL ALLOY  
ARMCO IRON



**You draw the Shape  
—Page can draw the Wire—**

—the way you want it for your production—whether it's ALL of your product, or only a part.

Cross-sectional areas up to .250" square; widths to 3/4"; width-to-thickness ratio not exceeding 6 to 1.

**for Wire or  
Information about Wire—**

*Get in touch  
with Page!*



(Continued from page 146)

Hewitt Rubber Divn., Hewitt-Robins, Inc., 240 Kensington Ave., Buffalo 5, N. Y. says its new Serv-all **all-purpose hose** permits a plant to store only one reel, cutting off lengths as needed for air, water, gasoline, etc., rather than having many different hoses on hand for specialized purposes.

No. 132—For further information see page 19

A new **current-limiting power fuse** with an interrupting capacity of 100,000 amperes has been announced by General Electric's Switchgear Divisions, Schenectady, N. Y. The fuse, Type EJ-6, is for applications on low-voltage circuits where the available short-circuit current is above the operating range of conventional National Electrical Code Standard fuses.

No. 133—For further information see page 19

Teflon, DuPont's new plastic that has complete chemical inertness, is now available in sheets and strips, blocks, rods, tubing, bars and cylinders, molded or extruded, or in molded specialties, from United States Gasket Co., 602 N. 10th St., Camden, N. J.

No. 134—For further information see page 19

Airlube, Inc., 3422 W. North Ave., Chicago 47, Ill., is marketing a new control unit that **cleans, controls and lubricates low pressure air lines**. The basic purifying and lubricating sections, which are combined with a common regulator and gage can be operated as separate units.

No. 135—For further information see page 19

South Bend Lathe Works, South Bend, Ind., has a hand feed turnstile operated **bed turret** which can be accurately fitted to the inside bed ways of any 16" swing South Bend lathe, making possible the economical production of duplicate precision parts without changing the basic lathe in any way.

No. 136—For further information see page 19

Monsanto Chemical Co., St. Louis 4, Mo., has made its chemical pentachlorophenol available nationally in a 1-to-10 concentrate as a permanent, non-discoloring and paintable **wood preserver and termite repellent** for industrial and home use.

No. 137—For further information see page 19

Cold drink vending "Dixie" cups incorporating the Green Cross emblem and "safety green" color of the National Safety Council, together with bold illustrations and punch-packed safety slogans are announced by Dixie Cup Co., Easton, Pa.

No. 138—For further information see page 19



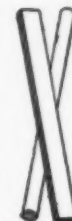
*Ask your  
VICTOR  
distributor  
about*



**THE NEW molyflex  
HIGH SPEED HAND  
HACK SAW BLADES**

Your Victor distributor will tell you that this new "Molyflex"... when pitted against eight leading competitive blades in cutting treated SAE 52100 ball bearing steel... *averaged 23.8% more metal cut than all the leading brands tested*. He will tell you that this new "Molyflex"... an addition to the Victor line... has greater uniformity, is absolutely shatterproof and unbreakable when used in a frame.

## VICTOR STEELRITE METAL MARKING CRAYONS



Ask your Victor distributor about the new Victor Steelrite Metal Marking Crayons. Available in a variety of sizes, these crayons are made of genuine soapstone. Special extrusion process insures uniform strength and composition. Markings can be made on hot, cold, damp or grimy metal and withstand pickling, yet do not affect enamel application.

*Don't forget to ask for a free copy of the Victor Metal Cutting Booklet for your pocket or tool kit and the Victor Wall Chart for your shop. They'll help you get the maximum efficiency from your metal cutting saw blades.*



**VICTOR**

SAW WORKS, INC., Middletown, N. Y., U. S. A.

Makers of Hand and Power Hack Saw Blades, Frames and Band Saw Blades

# PURCHASING

JULY, 1950

## OFFICE EQUIPMENT and SUPPLIES



PURCHASING MAGAZINE — A CONOVER-MAST PUBLICATION

205 EAST 42ND STREET, NEW YORK 17, N. Y.





## *The Desk of A Successful Man . . .*

His company is alert and knows that good executives merit every working convenience and knows, too, that a fine desk multiplies executive ability. Because of CRESTLINE's practical, built-in efficiency, planned-work design and unmatched appearance, his company selected the CRESTLINE "66" by Security for this successful executive.

Why not write now for the CRESTLINE Desk & Table folder and see how CRESTLINE's wide range of sizes, styles and finishes make them the perfect choice for all your offices.



MSF-66 CRESTLINE Flat Top Desk

SECURITY STEEL EQUIPMENT CORP., AVENEL, N. J.

*Crest* LINE



## C. E. SHEPPARD CO. CELEBRATES 50TH ANNIVERSARY

The C. E. Sheppard Co., manufacturers of loose-leaf equipment, is celebrating its 50th anniversary. C. E. Sheppard founded the company in 1900, and 20 years later plant and offices were moved from New York City to Long Island City where a modern three-story concrete factory building of over 100,000 square feet was constructed. A party and testimonial dinner were held at the plant to commemorate the golden anniversary of the company, and the 75th birthday of Mr. Sheppard, attended by over 300 guests and employees. An interesting anniversary brochure containing a brief pictorial history of CESCO and its products was prepared.

♦ ♦ ♦

## D. H. GULLETT NAMED G.S.M. FOR PARKER PEN

The Parker Pen Company of Janesville, Wisconsin, announces the appointment of David H. Gullett to the post of general sales manager. In addition to his new responsibilities, Mr. Gullett will continue as Janesville division sales manager, a position he has held for ten years. Mr. Gullett came to Parker 22 years ago from Texas. He started in the southwest as a salesman.

♦ ♦ ♦

## HARDY S. FERGUSON JOINS H. K. FERGUSON CO.

Hardy S. Ferguson, a leading pulp and paper mill engineer for many years, has joined the Pulp and Paper Engineering Division of the H. K. Ferguson Co., industrial engineers and builders, as consultant. Mr. Ferguson recently terminated his own engineering concern which had gained an international reputation as engineers and designers of pulp and paper facilities. Several of the principal engineers in his organization have also joined the H. K. Ferguson Company.

♦ ♦ ♦

## CHANGE NAME TO VISIRECORD INC.

In order to better identify its manufacturing division with its filing system "VISIrecord", the Visible Index Corporation, Long Island City, N. Y., has formally changed its name to VISI-record, Inc., which has been officially adopted for all phases of the company's U. S. operations.

The company operates in close cooperation with other outlets in North and South America. The two foremost of these are VISIrecord de Mexico, S. A., and VISIrecord of Canada, Ltd. At the present time there is in formation a new branch in Argentina that will bear the name VISIrecord of Argentina, with headquarters in Buenos Aires, Argentina.

(Please turn to page 152)

# —Modernize—

## YOUR CATALOG AND BULLETIN FILES

Bring your source information up-to-date on new and improved office equipment and supplies by checking the latest trade literature listed on this page. This special office equipment section is in addition to the regular trade literature section on pages 19, 20, 22, and 24!

When Writing to Manufacturers Direct, Please Mention **PURCHASING** Magazine.

☐ **63. PRINTING PAPER**—Sample sheets of Fra-Opaque, a printing paper of many purposes that comes in several weights and two finishes — for letterpress, offset and mimeograph—are contained in a booklet issued by Fraser Paper, Limited, 420 Lexington Ave., New York 17, N. Y.

☐ **64. ELECTRIC TYPEWRITER** — Brochure describes the IBM electric typewriter which produces work with the appearance of a printed page, and with even right-hand margins. Five type styles are available. International Business Machines Corp., Dept. PR, 590 Madison Ave., New York 22, N. Y.

☐ **65. ERASERS**—"How to Make Corrections Practically Invisible" is the title of a folder on erasers issued by the Eberhard Faber Co., 37 Greenpoint Ave., Brooklyn 22, N. Y.

☐ **66. DICTATING Cylinders or Discs**—A free test Cleartone cylinder or disc for use on your dictating machine will be sent by American Dictating Machine Co., Inc., 235 Fifth Ave., New York 16, N. Y.

☐ **67. DUPLICATING**—Samples of Marathon Ready-Masters for use in hectograph-duplicating will be sent in black, purple, or blue. Carbon surfaces and all cut edges are "super coated" to keep them clean. Special ink formula gives more clean sharp copies without smudges or finger marks. Columbia Ribbon & Carbon Mfg. Co., Inc., 156 Herb Hill Rd., Glen Cove, N. Y.

☐ **68. FILING**—The Robot-File, a new cost-trimming, time-saving file drawer that slants open front and back, creating a full 7" filing "V" even when crammed with papers, is described and illustrated in a new booklet available from Remington Rand, 315 Fourth Ave., New York 10, N. Y.

☐ **69. VOICEWRITER** — "Don't Work So Hard" is the title of a free booklet covering the Disc Edison Voicewriter dictating machine that features ear-tuned jewel-action said to give words "letter perfect" transmission. High frequency sounds—s, th, z, f—are clearly distinguished. Thomas A. Edison, Incorporated, West Orange, N. J.

☐ **70. PAPER**—Samples and test sheets of Snowland Bond, which is described as strong, high in bulk and excellent in appearance, are available in a new booklet. The paper is said to have good running qualities on modern high speed presses. Fraser Paper, Limited, 420 Lexington Ave., New York 17, N. Y.

### READER SERVICE

All listings include names and addresses of manufacturers.

However, each one is numbered. If you want to save Multiple-letter writing, just jot down the numbers of the items you want and month of issue, and list them in a letter on your COMPANY letterhead to

Reader Service Dept.  
PURCHASING Magazine  
205 E. 42nd St.,  
New York 17, N. Y.

NOTE: This service also applies to all the new products, equipment and supplies listed on pages 120-148.

For  
**PERFECT  
CONTROL**  
Over Factory and Office Forms  
at Sizeable SAVINGS...



So Light!  
So Thin!  
So STRONG!

Here's just what the P. A. ordered! A lightweight business paper of many uses and economies.

### STANDARDIZES OFFICE FORMS

Keeps your record and communication systems uniformly businesslike.

### 7 EFFICIENT ROUTING COLORS

In white or bright colors to assure accurate routing and filing.

### SAVES MONEY 2 WAYS

Sea Foam's lightness cuts down postage, and gives you many extra sheets per pound.

### SAVES OFFICE TIME

Sea Foam makes 14 clear copies. Thin to cut file space . . . yet crisp to stand up in files.



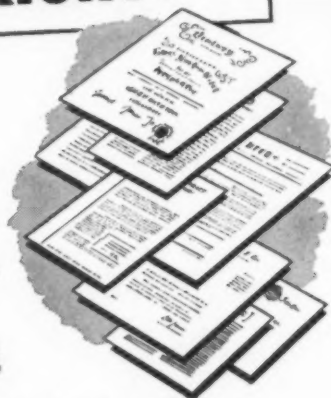
Write for  
**SEA FOAM'S  
FREE Test Kit**

Shows you just how good it is for all your paper needs! Write on your company letterhead.

BROWNVILLE PAPER COMPANY  
The Mill of Fine Lightweight Papers  
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*For documents of weight  
and authority—*  
**RIISING IS RIGHT!**

Legal documents have added dignity of appearance and legibility—when you use Rising Parchment. Outstanding opacity, and distinctive unglazed surface make this parchment the first choice of select clientele. Your printer will suggest Rising Parchment for deeds, wills, contracts and other document forms.



### Rising Parchment

- ✓ super opaque
- ✓ 100% rag
- ✓ 6 standard envelope sizes
- ✓ distinguished unglazed parchment finish
- ✓ four weights



WHEN YOU WANT TO KNOW... GO TO AN EXPERT!

# Rising Papers

ASK YOUR PRINTER... HE KNOWS PAPER!

Rising Paper Company, Housatonic, Mass.

### ROYAL TYPEWRITER COMPANY CHANGES

The Royal Typewriter Company announces the appointment of M. A. Kenney, former Kansas City salesman, to the position of district manager at Tulsa, with headquarters at 218 E. Fourth Street in that city. He succeeds H. E. Conaster, deceased.

The Portable Division of Royal, announces the addition of three men to its staff of district representatives, as follows:

Lee B. Sterling, former director of the Minneapolis Office Machine Dealers Association, has been appointed district representative for the territory headquartered at Des Moines. This territory includes Iowa, Nebraska and the Triple City area of Illinois.

Bruce K. Pipher has been transferred from the office typewriter division to the portable division, and has been assigned to the post of portable district representative for the territory headquartered at Nashville. This includes Tennessee, Alabama, Mississippi, Arkansas and Louisiana.

W. Thurston deGross has been named portable district representative for the territory headquartered at Newark. This includes the Northern half of New Jersey, the Scranton-Williamsport section of Pennsylvania, and Staten Island in New York.

(Please turn to page 154)

**"I never thought I'd  
call the boss a darling"**



Can't blame your file clerk for thinking you're sweet. You've just installed Oxford Pendaflex Hanging Folders, and they've turned her filing chores into filing cheers. Incidentally, you've done *yourself* a service. Pendaflex folders cut costs by as much as 20%. Of course, they fit right in your present cabinets.



**Oxford**  
**PENDAFLEX®**  
HANGING FOLDERS

Send for  
catalog today.  
**OXFORD FILING  
SUPPLY CO., INC.**  
Garden City  
N. Y.

Don't  
file it —  
**HANG IT!**



**MORRIS  
Products**

### DESIGNED TO SPELL Efficiency

The reason fine Morris Products are purchased is because they boost office efficiency. Their wide acceptance by necessarily critical purchasers is perhaps their most satisfactory endorsement. From pen desk sets to sponge cups Morris sets the standard. Available at better stationery and department stores.

Morris Products include desk pen sets both Fountain and Dip type, memo pad holders, phone rests, desk trays and many other essentials for office use.

**THE Bert M. Morris COMPANY**  
8651 WEST THIRD ST. • LOS ANGELES 48, CALIF.

BECAUSE WE'VE  
**Paper-Mated  
ERASERS**



Dottie of the flying fingers can salvage work she used to have to re-do ...The right Eberhard Faber Eraser saves time...temper...trouble...and cuts down on waste...Ask your Stationer for folder "How to Make Corrections Practically Invisible."



Since  
1849

**EBERHARD FABER**



# How Long Do You Keep Your Records?

By H. E. George

**Record Retention is an important problem featured by lack of uniformity in policies or systems**

**Retention period varies from one year to permanency according to classification and other factors**

**In general, records may be classed as vital and permanent, of temporary use, and current convenience**

THE CLEVELAND CHAMBER OF COMMERCE  
THE RETENTION OF RECORDS  
Based on Report from 67 Cleveland Companies - March, 1948  
Number of Companies and Length of Time Various Records are Kept

Type of Record	Under 1 Yr.	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.	6 Yrs.	7 Yrs.	8 Yrs.	9 Yrs.	10 Yrs.	12 Yrs.	14 Yrs.	15 Yrs.	20 Yrs.	25 Yrs.	Perm.*	Indef.**	Not Classi- fied ***
<b>CANCELLED CHECKS</b>																			
- Expense					1	2	9	8		1	10	1	1	7		1	8	1	2
- Pay Roll					1	3	11	10	1		13		1	5		1	8	1	2
Expense Vouchers				1	2	4	9	11			12			6			8		
<b>INVOICES</b>																			
- Sales				6	3	5	9	12			8			1	7		8		
- Vendors				2		4	6	11		1	17				8		9	1	1
<b>LEDGER CARDS</b>																			
Ledger Sheets				4			2	7			3				2	4	24	3	1
Time Cards		1	2	3	12	16	6	6	2		4				1		7		
Time Sheets		2	3	2	7	11	2	4	2		3						10	1	1
Time Tickets		7	7	3	7	10	4	3			2				1		3		2
Bills of Lading		1	6	1	1	14	7	12							1		2		
<b>CORRESPONDENCE</b>																			
- General			4	8	4	9	6	11			1				2		7	1	4
- Quotations		2	5	6	3	10	4	9	1		1				1	2	5	1	2
- Inquiries		4	5	6	4	10	4	10									4	1	2
- Claims			3	7	4	9	5	6			1				2		7	2	3
- Collections	1	1	5	10	3	13	3	5							3		4	2	1
Credit Reports	4	3	6	7		9	2	7			5				1		4	5	2
Express Receipts	1			5	13	9	4	14	1		4				4		1		1
Freight Bills			6	6		8	4	9	2		8				4		3	1	1
<b>PURCHASE ORDERS</b>																			
- Customers			5	7	2	10	5	11			4				3	1	8	2	
- Our own		1	4	7	5	6	6	9			7				5		7	1	

\* Seven companies microfilm various records for permanent retention.  
\*\* Generally no standard practice.  
\*\*\* Usually a spread of years or a refinement in practice not easily classified.

**T**HOUGH records and files accumulate faster than government deficits, few companies have well defined policies or plans governing the retention of business records. Often the respective departments of a company have their own record and storage systems, and in many cases records storage seems to be merely a matter of getting excess stuff out of the way and relying upon somebody's knowledge and a photographic memory to locate important files that later may be needed.

The result over the years is a vast

accumulation of correspondence, contracts, minutes, cancelled checks, catalogs, tax returns, receipts, purchase orders, on through the gamut of office and executive routine perpetuated on paper. The vault or the storeroom become the musty cache for a constant accumulation until an overflow necessitates a general housecleaning or more storage space.

Record retention practices widely vary. They range from the ruthless destruction of all records periodically, to the insistence of a department head that everything must be kept

intact indefinitely for the simple reason that "you can't tell just what may be needed." There is overcrowding of files paving the way for misfiling and the actual loss of important files.

Financial institutions, government agencies and public utilities are subject to legislative and official rulings governing the filing of records. These specify what records must be kept and how long they shall be kept. In general such rulings do not affect private business operations, though obviously where government contracts, tax matters,

## WHY DO WEBSTER DUPLICATING SUPPLIES ACTUALLY COST LESS?

**Because they last longer  
and give better service**

P.A.'s always get more for their duplicating dollars when they buy Webster supplies. These high quality products assure you of dependable service day after day after day. That's the big reason why leading offices for 61 years have consistently bought the Webster brand.

### EXTRA WEAR MEANS EXTRA VALUE IN EVERY WEBSTER PRODUCT

**1.** Webster's Tabulating Ribbons . . . made with high grade, woven edge cloth, properly inked for each type of machine to *guarantee longer wear.*

**2.** Webster's Micrometric Carbon Paper . . . with its exclusive numbered edge eliminates retyping for spacing errors. Gives clear, sharp impressions even after *continuous hard usage.*

**3.** Webster's Pencil Carbon . . . gives *100 impressions* which last as long as the paper on which they are written.

**4.** Webster's MultiKopy Typewriter Ribbons . . . have to be changed only half as often as standard ribbons. Made in extra lengths with special ink formulas for every typewriter.

Next time you need long lasting duplicating supplies of dependable quality, order Webster's. Consult your nearest dealer or write to F. S. Webster, 7 Amherst St., Cambridge, Mass.



## F. S. WEBSTER COMPANY

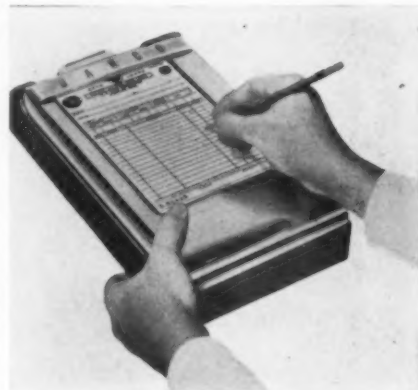
Webster's warehouses in key cities from coast to coast:  
New York, Philadelphia, Pittsburgh, Detroit, Chicago, San Francisco, Cambridge

### OLD TOWN ANNOUNCES NYLON TYPEWRITER RIBBON

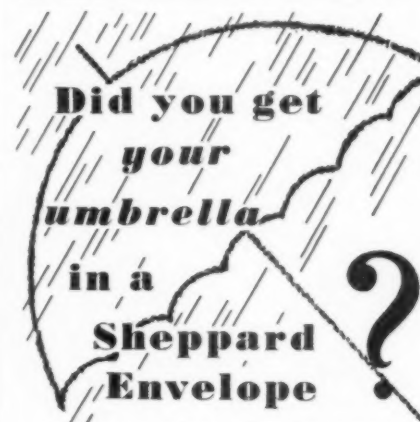
The Old Town Ribbon and Carbon Co., 750 Pacific St., Brooklyn, N. Y., has added Nylon typewriter ribbons to its line. The ribbon is packaged in a hermetically sealed tin. The ribbons are inked for all standard typewriters and electromatics with two inking.

1 1 1

### NEW UARCO PORTABLE REGISTER



A new portable register weighing 2½ pounds, and measuring 13" long, 8" wide and 3¼ high, has been introduced by Uarco Incorporated. The new model holds 100 three-part business forms. It is described as incorporating "big register" features without sacrificing its portability. (Please turn to page 158)



Just a reminder that the same company that makes those flavor-seal social and business envelopes also makes millions of product container envelopes — called "Product Pushers" — because they help sell, as well as protect, the products you buy.

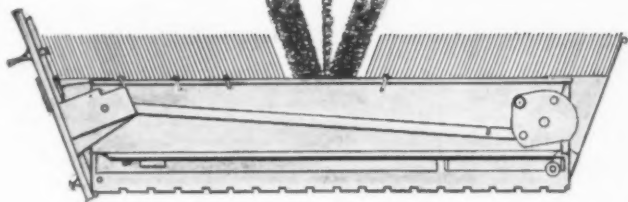
Next time you think of a product package think of Sheppard. See their colorful designs — compare their easy-to-load flaps.

Choose Sheppard envelopes.

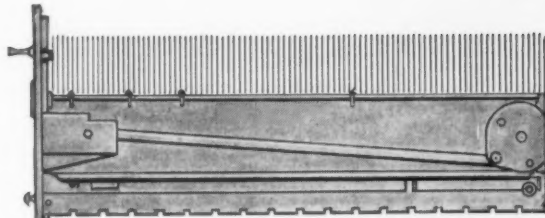
**Sheppard** with the  
flavor seal  
flap  
**ENVELOPES**  
1 Envelope Terrace  
Worcester 4, Mass.

# Robot-Filer's NEW SLANT

## means low-cost filing



**OPEN:** Robot-Filer drawer slants open front and back, creates a full 7-inch filing "V", even when crammed with papers. Papers can be found with ease, quickly returned.



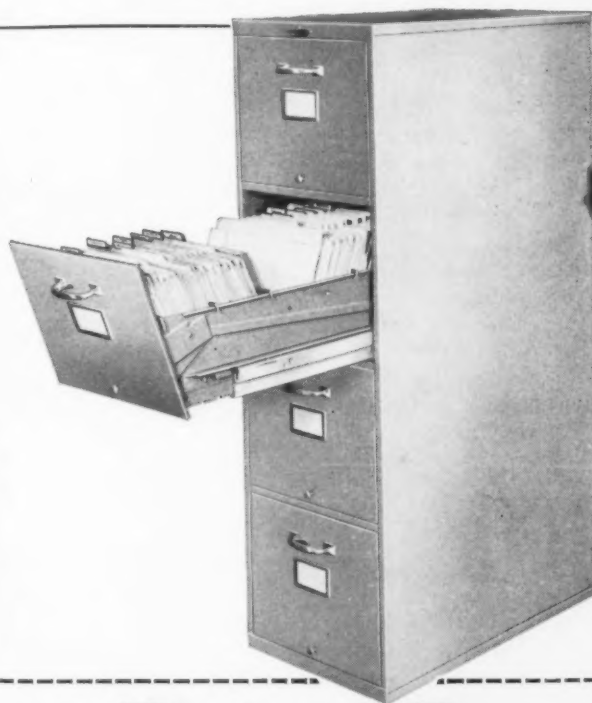
**CLOSED:** Back and front of drawer return to vertical automatically, with contents compressed. Tilting is mechanically controlled, automatic.

**Y**OUR largest single cost in filing is *labor to operate your files*. When you make filing easier, you make it less costly.

Robot-Filer's dual-tilt control *automatically* forms a generous seven-inch filing "V" as the drawer is opened. Folders are removed or inserted without tugging or straining. Folder tabs slant toward the eye, can be read easily, even those in bottom drawers. As you roll the drawer closed, Robot-Filer's tilting mechanism *automatically* pulls in drawer ends. The front cannot remain slanted when the drawer is closed.

Robot-Filer gives a full working "V" even when crammed with papers—unlike files on which only the front drops. Folders can be selected, material withdrawn or inserted, with one hand. No space is sacrificed in the rear of the drawer to obtain the working "V". The full capacity of the Robot-Filer drawer is 26 inches. It's the *only* file drawer that provides 26 inches of usable, *workable filing space* under all conditions.

That means you can reduce the number of files you need, because fewer files do more work. See Robot-Filer at your local Remington Rand office, in legal or letter size, and in three, four, and five drawer models. The booklet, "Robot-Filer and 3-Step Filing", will give you graphic, detailed information on how Robot-Filer can help you trim filing costs. Send for it today.



MAIL TO: **Remington Rand**

Management Controls Reference Library, Room 1549  
315 Fourth Ave., New York 10, N. Y.

Please send me your booklet, "Robot-Filer and 3-Step Filing"

NAME \_\_\_\_\_

FIRM \_\_\_\_\_ TITLE \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

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and other governmental activities and regulations affecting business are concerned, certain regulations may apply, and under any circumstances, files should be retained for a responsible period of time according to the nature and importance of the file.

Many associations and business groups have given considerable study to files retention based on use, retention value, and ultimate disposal. Though offering a differing approach to the subject their studies generally follow the reasoning that record storage should be based on the record itself and its importance as future reference material, and such fundamentals as legal requirements, government rulings, and ordinary horse sense.

That there is wide variation in record retention-time values is emphasized by the accompanying report prepared by the Cleveland Chamber of Commerce showing the length of time various records are kept by 67 Cleveland companies. This report covers storage of cancelled checks, invoices, different types of correspondence, purchase orders, ledger cards and sheets, and other types of business records. Overall, it will be noted, it would be impractical to strike a time average. But few companies file records for permanent retention, though permanent files of ledger cards and ledger sheets are maintained by 24 and 34 companies respectively. Otherwise, the number keeping permanent records varies from eight to one for varied classifications. Seven keep permanent records of purchase orders. The period of retention for the big majority of the 67 companies reporting, ranges from two to 15 years, depending upon the type of record. So far as purchase orders are concerned, 50 of the companies retain records from two to 15 years—and seven maintain permanent records.

A survey issued by the Metropolitan Life Insurance Company Service Bureau, lists four factors upon which record retention should be based: First, the nature of the document and its significance in connection with future company activities. (2) The availability in other files of identical copies of the same records. (3) The extent to which the data involved summarizes or is summarized by other available records. And, (4) the degree to which the material provides essential details of some basic record.

Other factors to consider are need for permanency because of

legal requirements; operating or historical data that should be preserved permanently; records which for legal or operating reasons should be retained for comparatively short periods, say three to ten years; records which from a legal or company standpoint may well be destroyed upon termination of current usefulness.

---

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## STATE STATUTES OF LIMITATIONS

### THREE YEARS

District of Columbia, Maryland, North Carolina

### FOUR YEARS

California, Canal Zone, Texas, Puerto Rico

### FIVE YEARS

Arkansas, Florida, Idaho, Virginia, Kansas, Nebraska, Oklahoma

### SIX YEARS

Alabama, Alaska, Arizona, Colorado, Connecticut, Delaware, Georgia, Hawaii, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, Vermont, Washington, Wisconsin.

### EIGHT YEARS

Montana

### TEN YEARS

Illinois, Indiana, Iowa, Louisiana, Missouri, West Virginia, Wyoming

### FIFTEEN YEARS

Kentucky

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A record-retention policy based on such an analysis would undoubtedly save storage space and clerical time over the years, for the average big department develops a vast amount of file material. Some has no future potential use or value whatsoever, some may have a short time reference value, and of course there may be some material that has a longer service tenure according to the nature of the subject involved yet of no value as permanent records. In many offices there is a vast amount of filed material that

might well be segregated for month to month destruction on the day it is written.

In general, records might be classed as (1) vital and permanent, (2) important, (3) temporary, and (4) current convenience.

The first category includes legal papers and supporting evidence and other corporate records, important contract and negotiation records and supporting evidence, and operational and historical data the loss of which might cause considerable inconvenience.

Second—important records: It is difficult to draw the line here, but there are records that are indispensable from the standpoint of current and continuous operation. Often these include information that is in frequent demand. It may be, of course, that much of the information is carried in the vital records, though not readily accessible except at considerable study and expense. Most of the records currently used come within this scope, such as production runs and costs, inventory data, and so on.

Third—Temporary: These would include records which can be disposed of as soon as their current usefulness no longer exists. They would include any type of material which might be needed for back reference until a file is closed.

Fourth — Current convenience and non-essential: A great deal of general and routine interdepartmental correspondence and written information comes within this group—some of it might well be discarded in a few days, or a week, or a month. The problem is one of sifting the chaff from the wheat, for in one instance a simple acknowledgment may be of prime importance, and in another case a bulky file may be of no value. The average executive doesn't have the time or the inclination to pass on what should be retained and what should be thrown out though it is apparent that the average file clerk has no way of determining the importance of some of these files.

Depending upon the nature of the file, another factor that enters into record retention is the legal factor, contingent upon legal potentials involved. Some companies base their record retention policy on the Statute of Limitations of the state in which they are located. When one considers that these range from three to ten years, and in one state 15 years, companies engaged in interstate commerce have need for

careful consideration in records retention. Of course, courts are not necessarily bound to base their actions on limitations statutes, and are inclined to give consideration to the equities involved rather than a mechanical time factor.

To provide adequate protection, the logical procedure is to maintain complete records properly indexed and filed for the longest period of limitation. It should not be necessary to file duplicates used in office procedure. In event of claims, all correspondence and records, settlement records and releases should be retained in the file, and the file maintained for the longest period of limitation regardless of any settlements that may have been made. There is no question that such documents as deeds, mortgages, releases and other types of legal papers should be retained indefinitely.

As to the legality of microfilm files, there is divided opinion. Some authorities hold that if microfilm is used, the use should be restricted if possible to company historical documents rather than to legal or legal-historical documents.

The admissibility of such photograph evidence is entirely at the discretion of the presiding judge. Accordingly, other legal authorities hold that it would be strong evidence in any court and would be sufficient to overcome any presumption of fraud when shown to the court that an actual copy has been made by a microfilm process. Before such evidence is admitted, proper foundation must be laid in accordance with the requirements in each jurisdiction. However, regardless of the jurisdiction, in laying the proper foundation there must be an authentication and verification.

It is held by these authorities that the microphotographic process is a system which is used in the regular course of business and as such should be admitted as readily as, for example, a bookkeeping system. A copyrighted release by Remington Rand Inc. shows, as indicated by the accompanying map, that statutes and cases in 47 states have held in effect that microfilming is a business system. Certain states have passed laws making microfilm records primary evidence.

In this connection Regulation No. 11 issued by the Office of Contract Settlement, Washington, authorizes war contractors to destroy certain war contract records provided mi-



**Microfilm Records are acceptable as legal evidence in most states**

crophotographs are made and retained—\* \* \* “records to which this regulation applies and which can be reproduced through photography without loss of their primary usefulness may be destroyed, provided however, that clearly legible photographs thereof are made and preserved. \* \* \* The term “photograph” includes \* \* \* microphotograph.”

On August 30 of last year, the President signed a directive covering the disposal of U. S. Government records authorizing the microfilming and the destruction of various records which come under the jurisdiction of the National Archives Council, the film stock used to comply with specifications of the National Bureau of Standards for permanent records.

The microphotograph record system unquestionably is a space and time saver. A 100-ft. roll of microfilm will contain 3,000 letter-size documents. In general it can be figured that such records occupy but one-percent as much space as would be required for the storage of the original papers. Of course more than ordinary care must be exercised to see that the records are complete, and in indexing and filing.

As is apparent, the determination of what records shall be kept, how long they shall be retained, and what papers may be discarded and when is not a simple matter. True, uniform policies and systems may be established but the human element of know-how and know-what are of prime importance where filing and proper recording of vital papers are concerned. However, it would seem a comparatively

simple matter to establish an overall policy covering the run of the mill correspondence, records, reports, etc., based on departmental and company experience, and the basic importance of specific types of files and documents.

It will be noted in the report issued by the Cleveland Chamber of Commerce that of the 67 companies reporting, 37 retain purchase orders from two to seven years; seven keep them ten years; five, 15 years; and seven keep permanent records. Vendors invoices are kept three to ten years by 38 of the 67 companies, 15 years by eight companies, and permanently by nine. Twenty companies hold their freight bills for two to five years; 23, six to ten years; and three keep permanent records.

Practices in Purchasing Departments vary considerably. A New England company files requisitions, inquiries and quotations for two years following usage, and files on long term contracts are kept for the life of the contract and two or three years beyond. The company's accounting department retains invoices for a period of five years for tax and accounting uses. The problem of what to save was solved by a decision to keep only important contracts covering equipment installations and contracts for raw materials.

Another company keeps its purchase order files which contain office copy of purchase order, inquiries, quotations and correspondence, invoices and drawings for a period of three years. At the end of that time all are destroyed except

(Please turn to page 160)

## "ELECTRICITY" makes the big difference...



## ... makes typing on the new Remington Rand *Electri-conomy* faster, easier, more accurate!

You name it—*distinctive correspondence uniformly typed, multiple carbon copies of invoices, bulletins, manuscripts, sharp, clear stencils, uniform reports*—the *Electri-conomy* performs them all... with electric ease, greater speed and greater accuracy.

In test after test where the *Electri-conomy* Typewriter has been installed, the *increased typing output* is piling up extra office profits—10%... 20%... 30% and even higher are the savings percentages reported by highly satisfied users.

Mail the coupon today for the amazing *ECONOMY* story of the Remington *Electri-conomy*.

MAKE THE *Electri-conomy* TEST IN YOUR OFFICE TODAY!

**Remington Rand**

THE FIRST NAME  
IN TYPEWRITERS

Remington Rand, Room 1648, 315 Fourth Avenue, New York 10, N. Y.

- ☐ Please send me FREE copy of RE 8300 "Electric Typing vs. Manual Typing."  
☐ Please have your representative call to make the FREE *Electri-conomy* Test in my office—without obligation, of course.

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

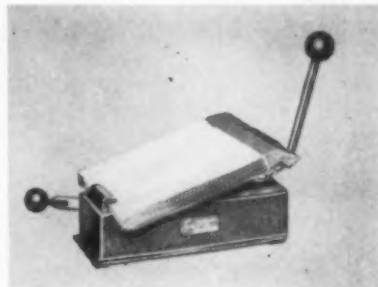
Copyright 1950 by Remington Rand Inc.

(Continued from page 154)

able use. Aside from the advantage of full size business records, the most important feature is the built-in clip tray for filing carbon copies, which is easily removed and replaced. This feature permits accurate end-of-day accounting.

\*\*\*

### MACHINE AUTOMATICALLY SNAPS APART STACK OF CARBON FORMS



The Printline Snaperator, a precision engineered machine designed to automatically snap apart a stack of one-time carbon interleaved forms has been announced by Joseph Zalkind, President of Printline Company, Inc., 22 W. 22nd St., New York, N. Y.

The machine has been specifically designed to minimize the "time wasted" factor and reduce the burden of operation wherever carbon interleaved sets are used. Systems and methods men have long been aware that the advantages of time and efficiency to be gained by the use of such sets are to a great extent nullified by the slow and tiring operation of snapping the forms apart by hand. Because of its unique leverage action and other patented features, the Snaperator accomplishes the transfer of effort and fatigue from man to machine. The Snaperator works on the action of a gripping clamp and rocker jaw. A unique feature of the gripping clamp which holds the stack of forms in place is its self-locking mechanism.

\*\*\*

### OFFICE MANAGEMENT HANDBOOK FOR EXECUTIVES

"Time, People and Equipment" is the title of handbook for busy executives, which presents a summary of basic rules and helpful information for the modern manager of an office or department, published by the Clary Multiplier Corp., San Gabriel, Calif. The booklet discusses Time, People and Equipment in a simple objective manner. Stripped of all non-essentials and unnecessary verbiage, it tries to present the most modern thinking and the most concise summary of rules available for the guidance and profit of modern office management. Following introduction, 24 pages are devoted to—How to Use Time Effectively, How to Get the Most Effective Work out of Your Office Force, How to Analyze Your Office Equipment, Summary of Rules, and a Two-Minute Commercial. Copies are available for the asking.



## OFFICES DEMONSTRATE "PAINT WITH LIGHT" TECHNIQUE

An interesting display relating light and color designed to show the dramatic possibilities of "painting with light" has been arranged at the district office of the Westinghouse Lamp Division at Chamblee, Ga. Five small offices, lighted by various hues of white fluorescent lamps, appear to be startlingly different, although their walls all are painted the same light green.

By standing in the general office area, a visitor can see five smaller offices lighted with lamps called standard white, warm white, soft white, 4,500 degree white, and daylight. In the soft white room the walls appear to be grey, in the warm white room they seem yellow green, and in the daylight room they resemble blue walls. In each room the lighting level is 90 footcandles, about triple the amount of light found in the average office.

For more comfortable seeing conditions, the office filing cabinets were repainted light grey and the old black desk tops were replaced with a mottled white rubber material.

1 1 1

## DIP-SET PEN-INK UNITS



The accompanying illustration shows writing sets made by the Bert M. Morris Co., 8651 W. Third St., Los Angeles, Calif., which many large companies have standardized upon and are furnishing to clerical staffs. They have found that office employees waste a great deal of time in an attempt to fill and keep fountain pens in service on the desk. The dip-set illustrated holds enough ink to fill over 100 fountain pens and will continue to feed it to the pen until dry. This represents about nine months of trouble-free use. The point is replaceable, and will write over a page without dipping. A large insurance company has installed in excess of 50,000 of the sets, and a Detroit motor company furnishes them as standard equipment, and has installed in excess of 25,000 sets. Savings are estimated to be at least \$1.00 per year per set.

## "MAGIC SPOT" makes the big difference...



## ...makes new Remington Rand Carbon Papers faster, easier, more economical to use!

There's a Remington Rand Carbon Paper to please every efficient secretary . . . and the most discriminating executives. And they all come in folders featuring the *exclusive* Magic Spot Sheet Selector—which assures removing only one sheet of carbon paper from the pack at a time and permits clean and economical handling. Inking of various shades and sensitivities, with finishes from "soft" to "extra hard" make it possible to produce unsurpassed original-like copies. Mail the handy coupon below for more detailed information on the complete Remington Rand exclusive "Magic Spot" Carbon Paper Line.

**Remington Rand**

**BUSINESS MACHINES  
& SUPPLIES DIVISION**

Remington Rand, Room 1848, 315 Fourth Avenue, New York 10, N. Y.

Please send me a FREE copy of the descriptive folder RSC177—"The White Glove Type"—telling about the entire Remington Rand Carbon Paper Line.

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

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**THIN PAPERS**

*Reduce*

TYPING, MAILING  
and FILING COSTS

*Use*

**ESLEECK**

THIN PAPERS

Fidelity Onion Skin  
Clearcopy Onion Skin  
Superior Manifold

Esleeck Manufacturing Co.  
Turners Falls, Mass.

## How Long Do You Keep Records?

(Continued from page 157)

those covering contracts, capital equipment or materials, these being kept for an indefinite period. Requisitions are filed in numerical order for a period of two years and then destroyed. General correspondence files are reviewed periodically and those which it is felt need not be kept longer are destroyed. The policy is to keep records for such time as it is felt it might be necessary to refer to them or until auditing requirements are satisfied by accounting records.

Another company destroys the numerical copies of purchase orders and receiving records yearly. On the other hand, important correspondence, delivery data and invoices are kept for a period of seven years. This company's bills payable department keeps the supplier's original invoice. Likewise, all quotations, inquiries and inventory records are destroyed at the end of the following year. Thus 1949 inventory records, for instance, will be destroyed at the end of 1951. Annual contracts are destroyed upon completion of negotiations for the following year's requirements. All

tracings, blue prints, etc. for equipment or plant additions or repairs, are maintained until replaced by new or revised drawings.

The purchasing agent states that this system has been quite successful over a number of years. Discretion is exercised as to what files other than those mentioned in the foregoing, should be destroyed, based on experience as to what should or should not be stored.

A Northern company has a special storage section for what it terms permanent record files. All government contracts are marked "Do Not Destroy." Another class of "Do Not Destroy" files covers plant machinery for which detailed information is necessary for repairs, replacements, etc.

Purchase order copies, records, invoices, and correspondence pertaining thereto are filed under the purchase order number. What are termed current files are kept by the purchasing department for a year and a half, individual folders being used for each purchase order number, which automatically consolidates all information—correspondence, copies of invoices, etc. In event a file is removed from storage, it is replaced by an indicator or card showing who has the file.

# KOH-I-NOOR PRODUCTS

The RIGHT pencil for the RIGHT job

## 62 Years Ago KOH-I-NOOR

made the FIRST Drawing Pencil . . . in 17 DEGREES, 6B to 9H. Since that time no other pencils have approached Koh-I-Noor's Record for Unfailing Uniform Performance.

**No Matter What Your Requirements . . .  
you will find a KOH-I-NOOR  
Product to satisfy you completely**

**NOW  
Available**

#1600 KOH-I-NOOR  
Polycolor Pencils  
with IMPORTED Leads

**in 66 colors**

DRAWING PENCILS  
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COLORED PENCILS  
OFFICE PENCILS  
ART PENCILS  
HOLDERS and LEADS  
PENHOLDERS and ERASERS



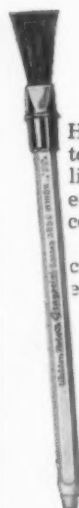
KOH-I-NOOR PENCIL COMPANY, INC., BLOOMSBURY, NEW JERSEY

## Weldon Roberts Erasers

Correct Mistakes in Any Language

**Yes, AN ERASER!**

WITH WOOD-PENCIL CASING, "BALANCE" and LENGTH



**Graypoint** — by Weldon Roberts

Hexo cedar casing keeps quality gray rubber core fresh to last longest, keeps eraser costs down. Sharpens just like a pencil (with knife or pencil sharpener) to a top efficiency point for fast erasing of typewriting, carbon copies, pencil writing.

No. 365, plain end. No. 3650, with special plastic Whisk cap securely holding live, business-like bristles, to give eraser crumbs a neat brush-off!

Ask your dealer to show you the Weldon Roberts illustrated price list featuring all styles, best values, in the world's finest erasers.



WELDON ROBERTS RUBBER CO.  
Newark 7 N. J.

# It's a time-saver for everyone in your office!



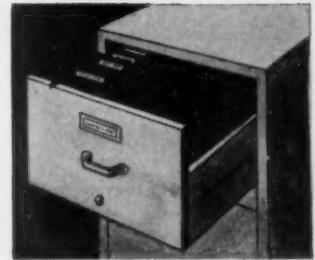
**"SCOTCH" BRAND Cellophane TAPE** is tops with me for all kinds of jobs like . .



**MENDING** office records, file cards, maps, correspondence



**MASKING** out unwanted parts of duplicator copy



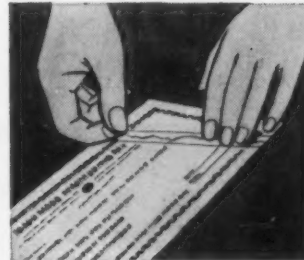
**LABELING** file cabinet drawers, folders and section dividers



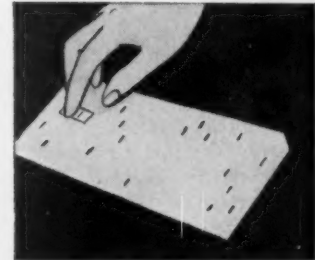
**IT SIMPLIFIES** lots of time-consuming jobs for me . .



**TAPING** swatches, coins, clippings, to letters and files



**MENDING** torn checks, vouchers, and currency invisibly



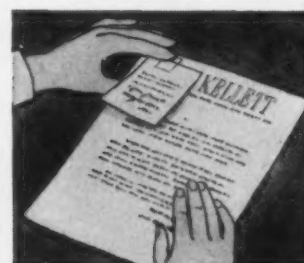
**CORRECTING** mistakes and revising tabulating cards



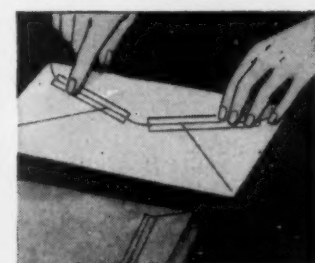
**VERY HANDY** for little odd chores that clutter up a day . .



**PUTTING UP** office notices, announcements, instructions



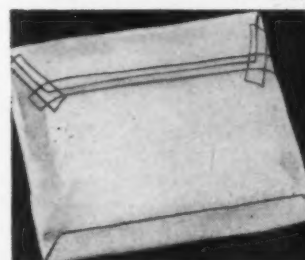
**ATTACHING** reminder tags and memos to letters and files



**DOUBLE-SEALING** important envelopes, confidential files



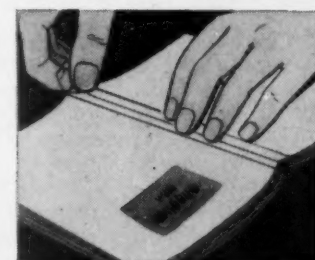
**"SCOTCH" BRAND Cellophane TAPE** helps me in . .



**SEALING** boxes, packages, bulky envelopes for mailing



**LABELING** supply shelves, rubber stamps, storage boxes



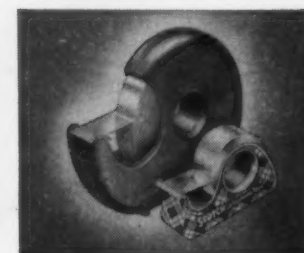
**REINFORCING** binders, notebooks, file folders, indexes



**HEAVY DUTY DISPENSER** is a favorite for mail rooms and file departments. Refillable with big, economical 2592-inch rolls. \$2.50 without tape.



**DESK DISPENSER** has soft rubber feet, lets you flick off any length of tape with one hand. Takes 1296- or 792-inch roll. \$1.69 without tape.



**PLASTIC HAND DISPENSERS** and Utility Dispensers keep tape handy at all times, ready to do a thousand and one jobs around the office.



**IMPORTANT:** There's more than one brand of cellophane tape—for quality always insist on the "SCOTCH" brand, in the bright plaid container.

Made in U.S.A. by MINNESOTA MINING & MFG. CO., St. Paul 6, Minn., also makers of other "Scotch" Brand Pressure-sensitive Tapes, "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-Slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: DUREX ABRASIVES CORP., New Rochelle, N. Y. • In Canada: CANADIAN DUREX ABRASIVES LTD., Brantford, Ontario.



# Among the ASSOCIATIONS

## R. Park Lamborn Heads New York Association

R. Park Lamborn, Kennecott Copper Corporation, was elected president of the Purchasing Agents Association of New York at the June 20 meeting, held in the Builders' Exchange Club.

Other new officers of the association for the coming year are: Edward A. Bantel, National Bureau of Casualty Underwriters, first vice-president; John F. Snedeker, Sr., Binney & Smith Company, second vice-president; Edward B. Fields, treasurer.

Members of the executive committee: (three-year term) Walter M. Hoffman, American Oil & Supply Company; G. Everett McMillen, Town of Montclair; (two-year term) George Z. Turadian, A & M Karagheusian, Inc.

G. W. Howard Ahl, Philip Morris & Co. Ltd., Inc., retiring president, becomes national director.

Members of the nominating committee were D. M. Meeker (chairman), H. D. Barnett, George L. Geiger, G. Everett McMillen, and George F. Plate.

secretary; Don J. Tenney, Crown Zellerbach Corp., treasurer. New executive committee members are P. A. Adams, Portland Railroad; Winston S. Bunnell, Oregon Steel Mills; B. E. Hearn, Pope & Talbot, Inc.; R. P. Stockwell, General

Construction Co. Don Woodman is executive secretary of the association.

The association awarded James McCready, Lewis & Clark College junior, a \$100 scholarship for his manuscript  
(Please turn to page 168)

## Chicago Women's Group Elects Officers



Rhoda M. Stewart



Ruth Dux



Alice Rowbotham



Florence M. Hayes

### PITTSBURGH ASSOCIATION SEES FREEDOM FILM

A regular closed meeting of the Purchasing Agents Association of Pittsburgh was held on May 16 at the Hotel William Penn.

The evening's program was highlighted by a double feature. The first was a film called the "Price of Freedom", dealing with social problems of the country. The second was a comedy sketch presented by an NBC cast of players, sponsored by the Allis-Chalmers Manufacturing Company. The sketch was originally given at the Public Utility Buyers meeting in Detroit in February, and was given at the Pittsburgh Association meeting by popular request.

### E. O. HAYMOND CHOSEN HEAD OF OREGON ASSOCIATION

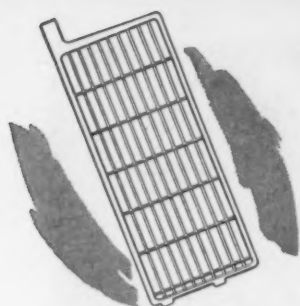
E. O. Haymond, Purchasing Agent for Shell Oil Company, was elected and installed as president of the Purchasing Agents Association of Oregon at the annual business meeting in May. He succeeds J. C. Jones, A. W. Davis Supply Co., who was named national director.

M. L. Simmons, Portland Traction Co., was elected vice-president; Paul Garmire, Inman Poulsen Lumber Co.,

The Women's Division of the Purchasing Agents Association of Chicago recently elected new officers for the coming year. Rhoda M. Stewart, Purchasing Agent, Marbon Corp., subsidiary of Borg-Warner Corp., was chosen president.

Other officers named are: Ruth Dux,

Purchasing Agent, Lenz Electric Company, vice-president; Alice Rowbotham, Assistant Purchasing Agent, Verson All-steel Press Company, secretary; and Florence M. Hayes, Purchasing Agent, Chicago Tool & Engineering Company, treasurer.

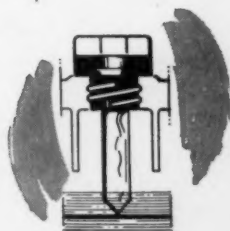


*Gould's "Z" Grid is the only  
completely solid grid.  
Porosity reduced 85%!  
66% more resistant to deterioration!*



*Regenerative active material.  
Glass tape and plastic envelope  
give perfect retention and  
insulation to "Thirty" Plates.*

# Here's Why They All Prefer GOULD-POWERED TRUCKS!



*Gould Batteries with Telelevel  
Vents show electrolyte level  
without removal of vent caps.  
Save time and trouble.*

Production, personnel, safety and accounting—  
all prefer Gould-Powered Trucks because they go  
at full power months after ordinary batteries have  
begun to slow down. They—

- Do more work.
- Lift, go at same time.
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- Position loads faster.
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- Cut accidents.
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- Eliminate down-time.

Power your trucks with  
**GOULD "THIRTY" BATTERIES**  
America's Finest Industrial Truck Batteries

## GOULD

STORAGE BATTERY  
CORPORATION

TRENTON 7, NEW JERSEY

*Always Use Gould Automobile and Truck Batteries*



C. F. McElhinney



Henry B. Abbett



C. L. Hough, Jr.



Father Sullivan receives the gavel from H. B. Bentsen



Part of the table seating the guests of honor at the president's inaugural banquet

## Educational Buyers' Association Holds 29th Annual Convention in Houston, Tex.

Hustling, hospitable Houston, Texas welcomed almost 300 members of the National Association of Educational Buyers to the group's 29th annual convention during the first week in May. To the thriving city, which is pacing the great Southwest's "boom", came representatives of higher educational institutions in all parts of the country, for an interesting and fruitful four-day session.

The Texas-Oklahoma-Arkansas regional group acted as hosts for the affair, with C. F. McElhinney, University of Houston, as general chairman, and Mrs. M. K. "Missy" Doss as vice-chairman. D. R. Kimrey, University of Oklahoma, is chairman of the regional group. John B. Rork, University of Denver, was chairman of the convention committee, which included Mr. McElhinney, Mrs. Doss, J. Fred Knight, University of Illinois, and all the national officers.

The program began on Wednesday, May 3 with the annual meeting of regional and group leaders. Rev. Leo J. Sullivan, vice-president, presided. The afternoon portion was devoted to the annual business officers' conference, with Charles H. Sparenberg, auditor, University of Texas, in the chair. Topics for discussion included "Formulating the College Budget", S. F. Bretske, vice-president, University of Chattanooga; "Controlling Supply and Maintenance Expense", Erwin Heinen, partner, Ernst and Ernst, Houston; and "Let's Be Businesslike from Trustees to Clerks", H. L. Doten, business manager, University of Maine.

With the aid of organization charts and personnel schedules distributed to the audience, Mr. Doten, offered a number of suggestions on reorganization in the hope of starting "all of you thinking how you can do a better job for your college or university". He pointed out that many of the people attending the meeting represented small institutions and might be part not only of the purchasing set up in their institutions, but involved in the "whole works", and therefore interested in the general problem of reorganization.

After a detailed analysis of the functions and responsibilities envisaged for various departments under reorganization plans, Mr. Doten listed some responsibilities of a more personal nature he thought applied to any business officer. "Know your own job", he said; "seek self improvement; set the example by conforming to office hours, rules and regulations and by being courteous, considerate, cheerful and optimistic; make sound and timely decisions; never ask the impossible of any employee; accept complete responsibility for your actions."

### Warm-Up Party

The ever-present Texas "atmosphere" was turned up to full-steam at the traditional "Warm-Up Party" held Wednesday evening. Buses took the members out to Buffalo Oaks, on the outskirts of Houston, where a genuine Texas barbecue, complete with fixin's was served. During the preceding cocktail hour and the dinner, a continuous program of music and entertainment was provided. Boyce House, raconteur and public speaker, brought the enthusiastic crowd up to date on the latest "Texas Jokes" after dinner.

The first general session of the convention was held in the South American Room of the Rice Hotel on Thursday, May 4. Following greetings to the delegates on behalf of Hon. Oscar Holcombe, mayor Houston, who was unable to attend personally, H. B. Bentsen, George William College, N.A.E.B. president, gave his report for the year. Mr. Bentsen drew a picture of great progress in the past—membership has grown from 350 in 1940 to 705 in 1950—and greater advance in the future as the members

(Please turn to page 166)



# *Specify* Thermoid Conveyor Belting



## Thermoid Ruff-Top Conveyor Belting "Floats" Packages On 35-Degree Incline!

*Save time—save money—save labor. Specify Thermoid Ruff-Top Belting*

Thousands of small, rough, irregularly-shaped points of soft rubber handle packages or cartons with full gripping power . . . *up or down inclines as much as 35 degrees*. Light packages literally "float" on the soft surface that allows the gripping action of the belt to take maximum effect.

Whatever your belting problems, you can count on Thermoid's continuing research and product development for uniform top quality in all types of conveyor belting. To insure long life and low maintenance cost, specify

Thermoid Conveyor Belts when you buy conveyor systems.

For replacement belting your Thermoid distributor carries a full stock of Thermoid Belting to meet your requirements. If you have an unusual application, your Thermoid distributor can call on the Thermoid field representative whose broad experience in *all* fields of industry equip him to help you select the right Thermoid belt for your job.

For greater economy, longer service life and larger load capacity, specify Thermoid.

It will pay you to *Specify* Thermoid

*Thermoid Quality Products: Transmission Belting • F.H.P. and Multiple V-Belts • Conveyor Belting • Elevator Belting • Wrapped and Molded Hose • Molded Products • Industrial Brake Linings and Friction Materials.*

**Thermoid**  
Company

Main Offices and Factory • Trenton, N. J., U. S. A.  
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strive toward professional maturity. He paid tribute to the educational committee of the association, headed by Forrest L. Abbott, Teachers College, Columbia University, and to the highly successful purchasing institutes held at Columbia and the University of Chicago.

He called for continuation of the institutes and further professional studies by the organization, saying "we have only scratched the surface" as far as development through education is concerned. He reported that a purchasing manual, sponsored by the association, is "on the way".

Principal speaker at the session was William R. Spiegel, chairman, Department of Management and Associate Dean, College of Business Administration, University of Texas. Dr. Spiegel's talk, "The Organization and Function of the Purchasing Department", is printed elsewhere in this issue.

#### Shamrock Hotel Luncheon

Prior to the entertainment-educational trips slated for Thursday afternoon, a special luncheon was held in the Emerald Room of the famed Shamrock Hotel. Father Sullivan presided.

During the afternoon, delegates broke up into three groups for visits to the following places of interest in the Houston area: the Humble Oil Company Baytown Refinery; various educational institutions combined in one itinerary, including Texas Medical Center, Baylor School of Medicine, and the University of Houston; and the San Jacinto Battleground. Half the group taking the battleground tour went by way of boat down the Houston Ship Channel and returned by bus. The other half alternated with them.

F. L. Abbott, Teachers College, presided at the first of a group of evening conferences on Thursday, which featured a talk by Charles W. Hayes, supervisor of purchases, Emory University on "Organization and Operation of a Receiving and Stores Department". Mr. Hayes' talk appears elsewhere in this issue.

Joseph W. Cannon, Jr., of "College University and Business" spoke on new products. He described a number of new products on which his publication had received publicity releases and several which were sent to him by members of the association after he had polled them on the subject. Following his talk he displayed the various releases, photographs, and actual products for examination by the audience.

Harry E. Martens, business manager, Bethel College, addressed the third group on "The Small College Business Administration, Organization and Operation".

#### "Mechanics of Purchasing"

D. R. Kimrey, purchasing agent, University of Oklahoma, and chairman of the Texas-Oklahoma-Arkansas group, was the first speaker at the Friday morning, May 5, general session, at which Jamie R. Anthony, Georgia Institute of Technology, presided.

Speaking on "The Mechanics of Purchasing", Mr. Kimrey advised his listeners to keep in mind that in many instances some department chairman will have either an openly expressed or secret feeling that he could do a better job of procurement than the purchasing department. He went on to describe the procedure involved in a purchase—from the time it is requisitioned until the order is filled—at the University of Oklahoma.

When working a bid, Mr. Kimrey declared, his department keeps three major points in mind: buy what the department needs; buy this material at the lowest possible price; and obtain delivery as quickly as possible, consistent with the first two points.

The department estimates, he said, that it costs approximately ten dollars to write and completely process an order, and the subsequent invoices. Figuring on this basis, he added, any bidder must bid a price advantage to the university in excess of that amount before an order will be issued. The bid of each company is also considered in the light of past performance by that company.

Mr. Kimrey also went over his department's purchase order, follow-up card, receiving report, request for quotation where orders can be placed without securing bids, and a letter order or open order.

(Please turn to page 170)



George H. Mew



Forrest L. Abbott



Joseph W. Cannon, Jr.



Part of the crowd at the general session



The Warm-Up Party in full swing



Father Reddington gives the invocation

A complete line—  
DISSTON BITE-RITE FILES  
from a single good source—  
YOUR LOCAL DISSTON  
INDUSTRIAL DISTRIBUTOR



# DISSTON<sup>®</sup>

## ...TOOL-MAKER'S TOOL MAKER

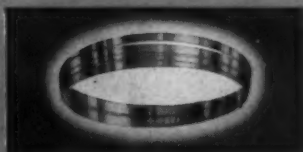


Thousands of dozens of files are used annually right in Disston plants, in the regular production of other fine Disston Tools. You could have no stronger proof that Disston Bite-Rite® Files are able to do the toughest kind of high-precision work, within rigid cost limits. *That's what Disston makes them for!*

Others in all lines of industry are likewise guarding quality, speeding schedules, and economizing, by using Disston Bite-Rite Files. *Disston Skill* makes each shape and cut precisely uniform. And *Disston Service* is ready to help you get every last penny's worth of good work out of Disston Files . . . and out of any other Disston Tools you buy.



For there is a qualified Disstoneer available to analyze operations for you, and consult with you on applying all Disston Tools most efficiently on any of your work. *Call for a Disstoneer to help you lick the jobs that lick the average tools!*



**DISSTON METAL-CUTTING BAND SAWS**  
You can get the correct types from the Disston line—Hardened Throughout and Hard Edge Flexible Back (in Regular and Butress Tooth patterns).



**DISSTON HACK SAW BLADES**  
For a wide variety of machine and hand metal cutting operations.  
**IN THESE TYPES:** High Speed Di-Met Chrome<sup>®</sup> Duraflex<sup>®</sup> • Reg. U.S. Pat. Off.

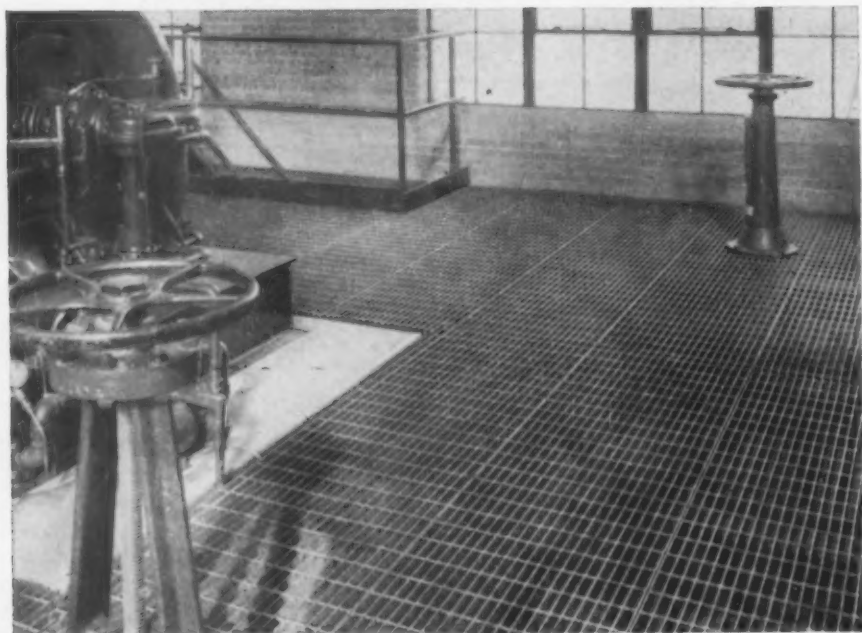
**HENRY DISSTON & SONS, INC.**

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# the *IDEAL OPEN FLOOR* for every industry!



IT'S Blaw-Knox Electroforged Steel Grating . . . with all the features to meet your requirements for open flooring. *Exceptionally strong*, electroforged into one solid, permanent piece. *Safe*, sure footing with the non-slip twisted bar. *Maximum open area* for good ventilation and light. *Self-cleaning*, no sharp angles or corners to clog. *Easily installed*, simple to cut and band for fitting around obstacles with no loss of strength. *Easily maintained*, paint reaches entire surface. *Adaptable* to many uses, indoors and out, for every industry.

Remember, whenever you need steel grating, be sure to **SPECIFY BLAW-KNOX.**

## SEND FOR NEW BULLETIN

Get complete details of all the superior features that make Blaw-Knox Steel Grating the best buy for your requirements. Write for your copy of Bulletin 2296 today!

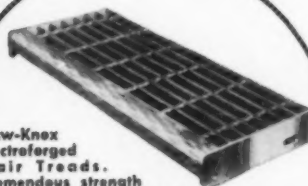
**BLAW-KNOX DIVISION of Blaw-Knox Company**

2075 Farmers Bank Bldg., Pittsburgh 22, Pa.  
Offices in Principal Cities

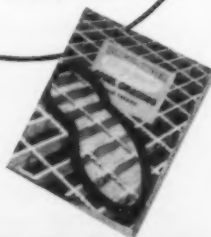
# BLAW-KNOX ELECTROFORGED STEEL GRATING

## MEETS ALL ENGINEERING REQUIREMENTS FOR

Open Flooring  
Sidewalk doors  
Bridge surfacing  
Catwalks  
Subway grating  
Sidewalks  
Stair treads  
Many other uses in every industry



Blaw-Knox Electroforged Stair Treads. Tremendous strength against impact. Three types available: Rolled diamond checker plate nosing (illustrated), twisted crossbar nosing, or abrasive nosing.



## OREGON ASSOCIATION

(Continued from page 162)

on purchasing which was judged the best paper in the annual college student purchasing essay contest the group sponsors. The sum was matched by the school.

The organization's rotating trophy for highest points scored during the year in membership-building and attendance went to John W. West, Purchasing Agent for Multnomah County. The association's membership climbed from 145 to 170 this year.



E. O. Haymond

Honor guests at the annual past president's night program were twelve former top executives of the association. They were W. B. Miller, J. C. Meece, J. A. MacTarnaghan, C. H. Clark, L. A. Baumhover, Fred Nowotny, Harold H. Cake, Glen M. Ede, Matt Pouttu, C. B. Amos, W. W. McCulloch and R. P. Stockwell. Others honored were Don Henderson formerly for 20 years editor of the association's magazine, the Oregon Purchasing News, and Warren J. Ulrich, former national vice-president of N.A.P.A. Leith Abbott, Portland advertising man, was the master of ceremonies.

1 1 1

## TRI-CITY ASSOCIATION NAMES NEW OFFICERS FOR 1950-51

New officers of the Tri-City Association of Purchasing Agents, recently elected for 1950-51, are as follows:

L. E. Batten, Nichols Wire & Aluminum Company, Davenport, Iowa, president; Leo Keller, Voss Bros. Manufacturing Co., Davenport, first vice-president; K. L. Dahlberg, French & Hecht Division, Kelsey-Hayes Wheel Company, second vice-president; Vernon Dick Victor Animatograph Corporation, Davenport, third vice-president; N. J. Clark, American Machine & Metals, Inc., East Moline, Ill., national director; K. L. Dahlberg, French and Hecht Division, Kelsey-Hayes Wheel Co., Davenport, secretary-treasurer.

Committee chairmen are as follows: program, Leo Keller; public relations, M. O. Hult, Blackhawk Foundry & Machine Co.; membership, Vernon Dick; educational, J. A. Fell, Red Jacket Mfg. Company.

(Please turn to page 170)

# WICKWIRE ROPE

A PRODUCT OF

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Ask any user...you'll find them everywhere

In scores of industries, users of Wickwire Rope have developed an affectionate respect for its performance, safety and long life. And, for true economy, they use Wickwire's WISSCOLAY® Preformed. It lasts longer — is easier to cut, splice and install. It's kink-resistant and safer to handle. Wickwire Distributors and Rope Engineers, in key cities everywhere, are prepared to render prompt service in meeting your wire rope needs. Wickwire Rope Sales Office and Plant — Palmer, Mass.

IN THE EAST—Wickwire Saenger Steel Div. of C. F. & I.  
300 Fifth Ave., New York 18, N. Y.

IN THE ROCKIES—The Colorado Fuel and Iron Corp.  
Continental Oil Bldg., Denver, Colo.

ON THE WEST COAST—The California Wire Cloth Corp.  
1080—19th Ave., Oakland 6, Cal.



LOGGING



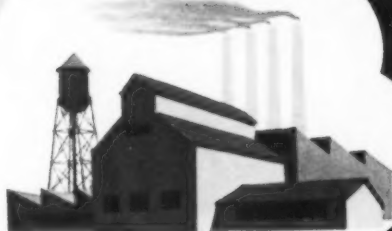
TRANSPORTATION



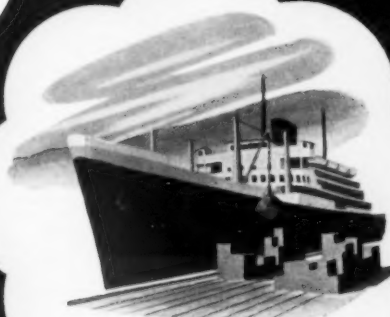
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PETROLEUM



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MARINE



CONSTRUCTION

every business  
needs



HAUL LUMBER YARD



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**STAONAL**  
marking crayons

—and there's a STAONAL  
for every business need

Every business and industrial establishment of every size needs some kind of checking or marking crayon—and there's a STAONAL to fill the bill, no matter what the requirement. Black, white and colors. Waterproof and permanent, or washable and removable, as required.

SEND TODAY for FREE catalog of industrial crayons to Dept. P50.

**BINNEY & SMITH CO.**  
41 East 42nd Street, New York 17, N. Y.



(Continued from page 166)

One of the highlights of the convention was the Purchasing-Sales demonstration that followed Mr. Kimrey's talk. The author of the script and director of the production was Leslie F. Robbins, purchasing agent, University of Colorado. Before the skit was presented, sheets containing the dialogue, an explanation of its purpose and hints for production by other groups or individuals for the purpose of self-education were distributed. They pointed out that the skits are presented in an attempt to "induce us to look at ourselves as we are on the firing line". "At least two things we may learn more about", it was said, "we can learn how to be more nearly at our best in the sales-purchase interview, and we can learn how to help the salesman be of greater help to us."



Admiral (Nebraska) Bert Ahrens battens a couple of hatches or something aboard the S.S. Texas with Commander (ex-U. S.) D. R. Kimrey, center, and Commodore (Texas Militia) George J. Stephens

**OILING**  
is easy!



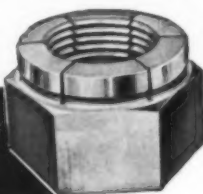
with an **EAGLE**  
HYDRAULIC PUMP OILER  
because—

- Easy to operate
- Easy to clean
- No soldered connections
- No pump leathers
- Pumps any oil that flows
- All pump parts renewable
- Delivers oil drop by drop or in a full stream

Order from your distributor

**EAGLE MANUFACTURING CO.**  
Dept. P 75 Wellsburg, West Virginia  
Serving the trade since 1894

... WON'T  
SHAKE  
LOOSE



**FLEXLOC**

ONE-PIECE  
SELF-LOCKING NUTS

The FLEXLOC is one-piece all-metal . . . has ample Tensile and long life. It is a Stop and Lock-Nut that can be reused many times. Its "chuck-like", resilient locking segments lock the FLEXLOC securely in any position on a threaded member. It positively "won't shake loose", yet can be removed easily with a wrench.

Write for Catalog 619,  
it's full of Information.

**STANDARD PRESSED STEEL CO.**

JENKINTOWN 31, PA.

Act I dealt with the situation in which a salesman brought a requisition to the purchasing department "expecting to take a nice order away with him." Two episodes showed how different types of purchasing agents dealt with the problem. In Act II, a "high pressure" salesman made a call at the office of the purchasing agent. Again, two different techniques of handling a situation were demonstrated.

The entire performance appeared to be well-received by the audience and to have put over important points in a manner that was both impressive and entertaining at the same time. The cast of characters included H. V. Neece, Northwest Missouri State Teachers College; Miss Marion E. Hill, Phillips Academy; D. L. McNamara, University of Southern California; Ainsley Burks, State University of Iowa; C. W. Manning, University of Denver; and K. A. Jacobson, California Institute of Technology.

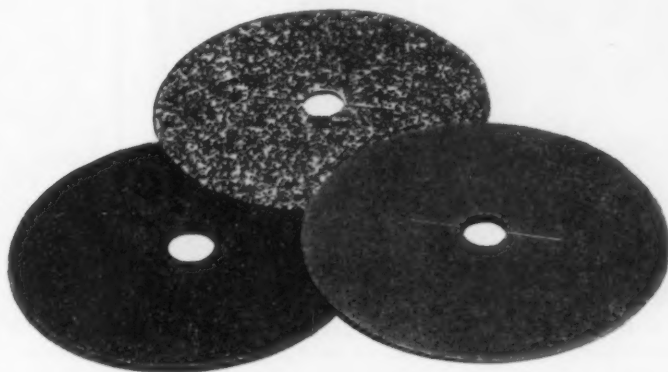
Claude L. Hough, Jr., The Principia, was the toastmaster at a luncheon held Friday noon to honor the past presidents of the association. Guest speaker at the luncheon was Hon. W. St. John Garwood, associate justice, Supreme

(Please turn to page 172)





## COATED PRODUCTS COMMENTS



### Are you buying the right sander discs?

Specifying and using the right discs to sand fabricated or cast metal parts can make an important difference in your time and cost figures. To cover the broad working extremes normally encountered, three types of sander discs have been designed by CARBORUNDUM.

**For sanding high tensile strength metals—**CARBORUNDUM's Green Back Resin Sander Discs (F ALO M) retain their high initial rate of cut longer than conventional discs...resist heat...cut cooler...and are safe to operate.

**For following unusual contours—**Blue Back Sander Discs (FC ALO M) combine flexibility with cutting power. They have a heat-resisting modified glue bond on a combination backing.

**For sanding low tensile strength materials—**Blue Back Open Coated Sander Discs (FC ALO OP M) retard "loading up". This increases disc life—reduces time lost for change-overs due to filling.

The cutting edges on periphery on all CARBORUNDUM Discs last longer because of special dieing out process...can be trimmed by you for use in smaller diameter.

As an aid in selecting and applying the right abrasive products efficiently and economically, we suggest that you call on CARBORUNDUM's experience. Obtain this from talking with a representative or by writing for our latest authoritative literature. Coated Products Division, The Carborundum Company, Niagara Falls, N. Y.

## COATED ABRASIVES BY **CARBORUNDUM**

TRADE MARK

Making **ALL** abrasive products...  
to give you the proper **ONE**

"Carborundum" is a registered trademark which indicates manufacture by  
The Carborundum Company



## Atom pile by-products "fly" to help medical research



**Radioisotopes** were needed by a Boston hospital for patient treatment. Lead-shielded box of radioactive iodine (weight, 35 lbs.) picked up by Air Express in Knoxville, Tenn., at 11 A.M., delivered 7:15 P.M. Charge, \$3.60. Hospitals, like all business, use Air Express regularly to get supplies from anywhere in hours.



**It's easier** and more convenient to use the world's fastest shipping service. When shipments are ready, just phone for pick-up. Special door-to-door service included in the low rates.



**Shipments keep moving.** Air Express goes on every Scheduled Airline flight. Frequent schedules. Use dependable, experienced Air Express—keep your business rolling at a profitable clip.

### Air Express gives you all these advantages:

- World's fastest** transportation method.
- Special door-to-door service** at no extra cost.
- One-carrier responsibility** all the way.
- 1150 cities** served direct by air; air-rail to 22,000 off-airline points.
- Experienced Air Express** has handled over 25 million shipments.

Because of these advantages, regular use of Air Express pays. It's your best air shipping buy. For fastest shipping action, phone Air Express Division, Railway Express Agency. (Many low commodity rates in effect. Investigate.)

Rates include pick-up and delivery door to door in all principal towns and cities

A service of  
Railway Express Agency and the  
**SCHEDULED AIRLINES of the U.S.**

(Continued from page 170)

Court of Texas. Judge Garwood's subject was "Colleges and Courts".

The annual E. & I. Cooperative program was held on Friday afternoon, under the chairmanship of E. H. Turner, Princeton University. Among those speaking were William S. Price, manager of the E. & I. Cooperative Service; George H. Mew, Emory University, retiring president; and Henry B. Abbott, Purdue University, now president.

### Inaugural Banquet

The president's inaugural banquet was held on Friday in the hotel ballroom. It was preceded by a social hour in the South American Room, with the Texas-Oklahoma-Arkansas Group playing host.

H. B. Bentsen, retiring president, was toastmaster at the banquet and installed the new officers. Rev. Arthur Stevens Knapp, of Houston, offered the invocation. Principal speaker was Thurman Sensing, director of research of the Southern States Industrial Council, Nashville, Tenn. Mr. Sensing's subject was "Until the Well Runs Dry".

New officers for the coming year, installed at the banquet, are: Rev. J. Leo Sullivan, S. J., director of purchases, College of the Holy Cross, Worcester, Mass., president; Jamie R. Anthony, controller, Georgia Institute of Technology, Atlanta, Ga., vice-president; John B. Rork, purchasing agent and assistant to the treasurer, University of Denver, Denver, Colo., vice-president; K. A. Jacobson, purchasing agent, California Institute of Technology, vice-president; Bert Ahrens, 45 Astor Place, New York 3, N. Y., executive secretary.

The final general session, held on Saturday morning, May 5, featured commodity discussion presided over by George Frank, purchasing agent, Cornell University.

### UTAH ASSOCIATION ELECTS HOPKINSON PRESIDENT

John P. Hopkinson, Utah Poultry and Farmers' Cooperative, was elected president of the Purchasing Agents Association of Utah at a regular meeting held recently in Salt Lake City. Eighteen past presidents of the association were guests at the meeting.

Other officers chosen were: M. Vern Woodhead, vice-president; Gordon Burt Affleck, secretary; G. R. TenEyck, treasurer; and William C. Allen, national director.

### JACKSON GROUP REELECTS SCHULTZ AS PRESIDENT

A. L. Schultz, Kent-Moore Organization, Inc., was reelected president of the Purchasing Agents Council of Jackson, Mich., at a recent meeting.

Other officers elected were: C. R. VanderVeen, Miller Machine & Tool Co., vice-president; James Trail, Hancock Manufacturing Co., secretary-treasurer.

to an imaginative engineer...

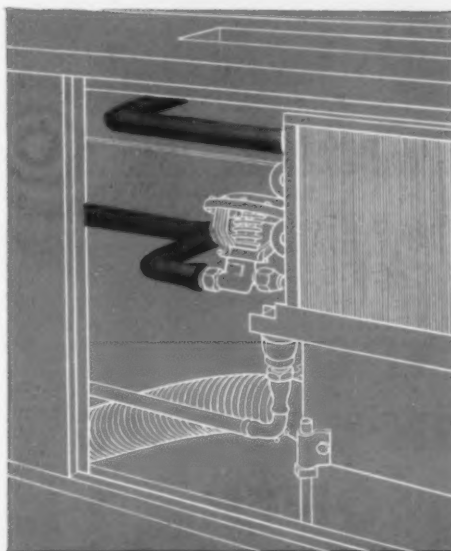
this basic *Spongex*<sup>®</sup> form

yielded this idea

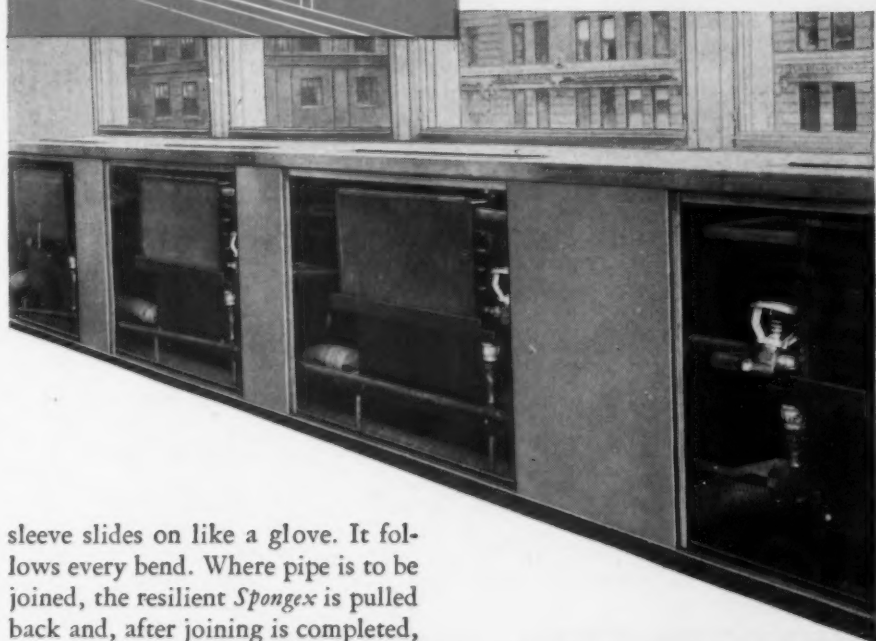


to become  
this application

in this  
climate control  
development



*Air conditioning system installation  
by Kerby Saunders, Inc.,  
at 100 Park Avenue, New York.  
George A. Fuller Company, General Contractor.  
Kahn & Jacobs, Architects.  
Jaros, Baum & Bolles, Consulting Engineers.*



Cellular rubber does not become a "product" until you make it one in *your* application of its known qualities as insulation against shock, vibration, sound and air and temperature transmission. Thus, one of many basic forms of *Spongex* cellular rubber becomes a covering for copper tubing in the application made by Kerby Saunders, Inc., New York, mechanical contractors.

With *Spongex*, they overcome condensation and provide insulation in air conditioning unit feed and return lines. And they do so with the least expenditure of costly time and effort. No adhesives are needed. The simple

sleeve slides on like a glove. It follows every bend. Where pipe is to be joined, the resilient *Spongex* is pulled back and, after joining is completed, is returned to cover the joint.

In every industry there exist problems that *Spongex* cellular rubber may solve. Think about it. If your

thoughts are on vibration, insulation, cushioning, gasketing, sealing or sound damping, we can be your greatest help.



**THE SPONGE RUBBER PRODUCTS COMPANY**

**304 Derby Place, Shelton, Conn.**



Can  
You  
Name  
it?\*



**IT'S THE  
GRAY IRON  
PRODUCTION CASTING  
OF THE MONTH**

**ANOTHER  EXAMPLE  
OF PRODUCTION CASTINGS**

that our modern and completely staffed and equipped Foundry turns out regularly for satisfied customers. They know that it saves them time, money and production headaches to always bring their casting problems to

**SUPERIOR FOUNDRY INC.**

3542 EAST 71st STREET • CLEVELAND 5, OHIO

**VULCAN 3-8000**

Member of the Gray Iron Research Institute

This hydraulic valve which withstands intermittent oil pressures from 0 to 1250 P.S.I. is typical of the porous-free, gray iron castings with clean cored passages, cast close to pattern tolerance produced by the Superior method.

**WALTER ARMSTRONG ELECTED  
PRESIDENT OF CHICAGO ASSN.**

Walter Armstrong, Assistant Cashier and Director of Purchases, American National Bank and Trust Company of Chicago, was elected president of the Purchasing Agents Association of Chicago at the Association's recent annual meeting.

Robert A. Doyle of the Glidden Company, Soya Products Division, was elected first vice-president and William D. Jackson, Container Corporation of America, second vice-president. Larry Seen, Borg and Beck Division of Borg-Warner Corporation, was re-elected secretary and Harry H. Wise, Cenol Company, Inc., was re-elected treasurer.



Walter Armstrong

Armstrong, who has been with American National since 1931, is also vice-president of the American National Safe Deposit Company.

The Purchasing Agents Association of Chicago with 840 members is the largest local organization in the National Association of Purchasing Agents, which has a total membership of over 12,000, representing the nation's leading industries and business concerns.

The three new members elected to the Association's Board of Governors are: Leonard M. Ansley, Inland Steel Container Co.; Ferdinand E. Hammes, Edward Hines Lumber Co., and Vernon O. Oftedahl, Whittier Laboratories Division of Nutrition Research Laboratories.

1 1 1

**SILICONES IN INDUSTRY TOPIC  
AT DALLAS ASSN. MEETING**

A regular meeting of the Purchasing Agents Association of Dallas was held on Thursday evening, June 8, at the Melrose Hotel. M. H. Leavenworth, southwestern manager of Dow Corning Corporation spoke to the group on the subject "Silicones in Industry". Mr. Leavenworth augmented his talk with slides and interesting demonstrations, and also distributed samples.

(Please turn to page 176)

# WILL THIS COAL FEED THE WRONG KIND OF FIRE?

THOSE giant coal piles that stand next to power plants present little fire hazard in themselves. But when industry feeds its coal into pulverizing machinery to make a faster-burning, more efficient fuel, then sends it through ducts connecting pulverizers to storage bins—the picture changes! The fine coal particles ignite easily, burn fiercely—and flames inside the duct are almost impossible to get at.

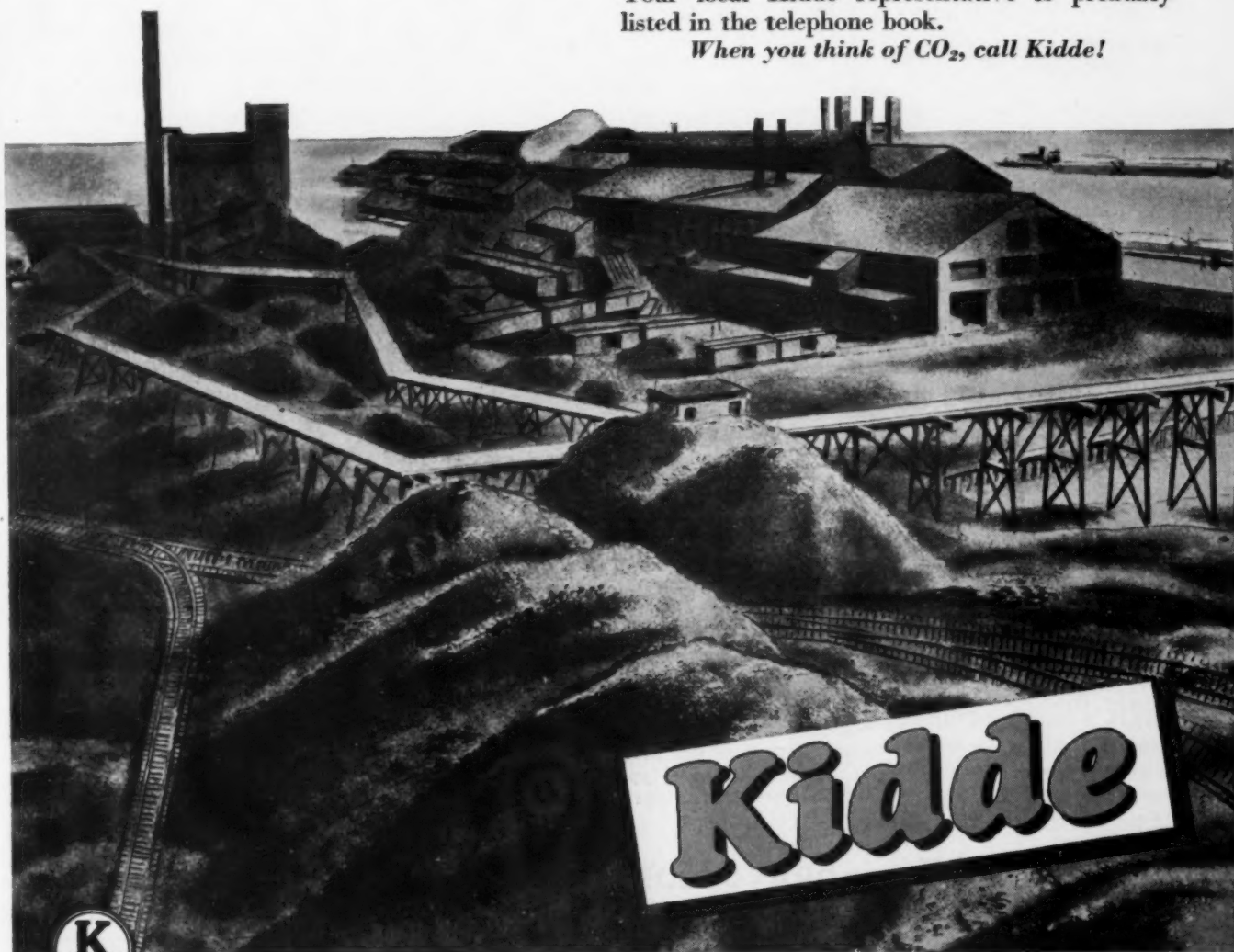
That hazard is taken care of in a mighty effective way at the East River Plant of Consolidated Edison Company of New York—by a *Kidde* automatic extinguishing system.

If a fire breaks out in the duct, the system goes into action fast. Pressure trips operate to close the duct dampers . . . flame-smothering carbon dioxide ( $\text{CO}_2$ ) pours through *Kidde* Nozzles directly into the duct. The flames are out in a few seconds—and the unburned coal stays dry, clean, ready for use.

It's in cases like this—where hazards are toughest—that *Kidde* skill counts *most*. It will pay you to bring your fire-protection problems to us.

Your local *Kidde* representative is probably listed in the telephone book.

*When you think of  $\text{CO}_2$ , call Kidde!*



## Kidde



**Walter Kidde & Company, Inc., 747 Main Street, Belleville 9, N. J.**

In Canada: Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

An ounce of prevention

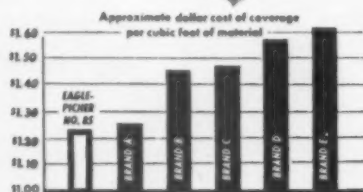
## EAGLE-PICHER INDUSTRIAL FLOOR DRY NO. 85

is worth  
a pound of cure

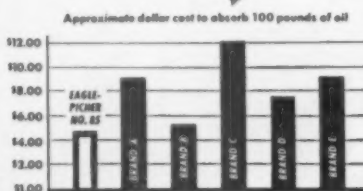
Eagle-Picher Industrial Floor Dry No. 85 is a granular mineral compound—chemically inert, non-combustible, and insoluble in oil, grease, kerosene or water. It can give you positive reduction in operating costs plus greater safety. Write for complete information.

*Here's proof that Eagle-Picher  
Floor Dry No. 85 is tops in  
efficiency, economy*

### Comparative Coverage Costs



### Comparative Absorption Costs



Packed in convenient 50-pound,  
multi-wall Kraft paper bags

## The Eagle-Picher Company

GENERAL OFFICES: CINCINNATI (1), OHIO

The Eagle-Picher Company  
Department P-7-5(1)  
Cincinnati (1), Ohio

Gentlemen: Please send me complete  
information about Eagle-Picher Industrial Floor Dry No. 85.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ County \_\_\_\_\_ State \_\_\_\_\_



### K. F. HODGE NAMED PRESIDENT OF GRAND RAPIDS ASSOCIATION

Kenneth F. Hodge was elected president of the Purchasing Agents Association of Grand Rapids at a meeting held recently in the Rowe Hotel.

Other officers elected include: H. Holmes Ellis, vice-president; Henry W. Kooistra, secretary; Theodore P. Koets, treasurer. Earl R. Gillette is national director. Louis Beamer and Edward S. Carnie are members of the executive committee.

The annual spring outing of the association was held at the Green Ridge Country Club on June 20.

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### SPRINGFIELD ASSOCIATION ELECTS NEW OFFICERS

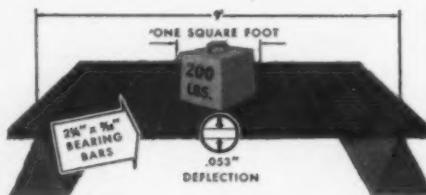
Robert I. Clark, The Steel Products Engineering Co., was elected president of the Purchasing Agents Association of Springfield (Ohio) at a recent meeting. He replaces G. B. O'Meara, Howard Paper Company, who is now national director.

Other officers elected include: Lewis Fitch, Wittenberg College, vice-president; Arthur Monjar, Patton Manufacturing Co., secretary; Harvey Auld, Lagonda Bank, treasurer; Wayne Deviers, The Oliver Corp., local director; and Dr. A. W. Hammond, Dry-Rite Co., Xenia, O., out-of-town director.

(Please turn to page 178)

For **STRENGTH** specify

## TRI-LOK RECTANGULAR OPEN STEEL FLOORING



The locked-in strength of Tri-Lok enables it to stand up under heavy loads—even on long spans. No rivets, bolts, or welds are used in the construction of Tri-Lok; this feature eliminates the possibility of loose joints.

Tri-Lok is also available in Diagonal, or Super-Safety U-type Flooring, and in Stair Treads of all types. Write for Bulletin KP 1140.

### DRAVO CORPORATION

National Distributor for the  
Tri-Lok Company

Dravo Bldg., Pittsburgh 22, Pa.

Sales Representatives  
in Principal Cities



## Federated first for SOLDERS...



### ... for QUALITY

Federated has the resources of a worldwide organization... raw materials are the best obtainable... alloying is done scientifically in modern plants under strict control of metallurgists. Core solders listed by Underwriters' Laboratories, Inc.

### ... for SERVICE

Practical field service engineers and skilled research scientists combine forces to solve any problem you have... with solder or any non-ferrous metal. All this service is yours for the asking.

### ... for VARIETY

Federated makes every commercial solder in any size or composition you want... acid wire, rosin core, solid wire... the exclusive CASTOMATIC bar solders... automotive body solders... pig, drop, foil, ingot, triangle, strip, wiping and segment solders.

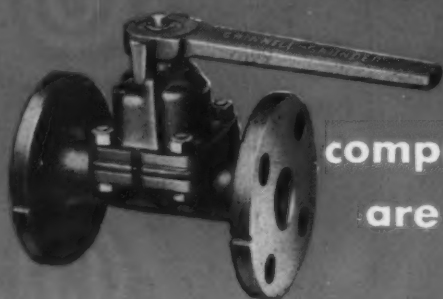
One of Federated's 25 sales offices across the nation is near you. Speedy service on any non-ferrous metals request.

## Federated Metals Division

American Smelting and  
Refining Company,  
120 Broadway, New York 5, N.Y.





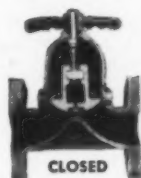


The only  
compressed-air-tight valves  
are valves designed for  
compressed air



## GRINNELL-SAUNDERS DIAPHRAGM VALVES

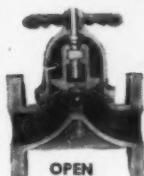
**Invented by a mine engineer to stop air leaks.** A rubber diaphragm seating on metal gives positive closure, even when scale is lodged on the weir. At the same time, working parts are isolated from the air lines so that no packing glands are needed, no stem leaks are possible. That was the idea behind the Grinnell-Saunders Diaphragm Valve. As one engineer said, "When about a third of your air compressors are just pumping air out through leaks and this diaphragm valve eliminates the leaks, cutting out one-third of your air costs, why you've really got something."



**Diaphragm gives leak-tight closure against grit, scale, solid matter.** The resilient diaphragm, plus the large area of contact, gives leak-tight closure against pressure or vacuum. You can't keep scale out of compressed air lines but tests prove that Grinnell-Saunders Diaphragm Valves give perfect closure when scale up to 1/6" diameter is trapped in 1" valves and up to 1/4" solids in larger valves.

**No "freezing", no clogging,** because all working parts are sealed off from compressed air and moisture.

**Friction loss reduced** by streamlined flow in both directions. Diaphragm lifts high to give unobstructed passage. Friction coefficient remains practically constant throughout range of valve sizes.



**Inexpensive maintenance without removing valve from line.** Diaphragm is only part that normally wears and needs replacement. Often lasts for years since compressor and finger plate support it in all positions. Quickly, easily replaced without removing valve from line. No refacing, no disc holder, no packing glands.



**Self-financing through compressed air savings.** This table from "Compressed Air Data Book" shows how fast you can pay for Grinnell-Saunders Diaphragm Valves out of the compressed air savings, and, perhaps, avoid the purchase of larger compressors.

Size of opening inches	Cu. ft. wasted per month at 100 lbs. pressure based on nozzle co-efficient of .65	Cost of waste per month based on 6 cents per 1000 cu. ft.
3/8	6,671,890	\$400.31
1/4	2,920,840	175.25
1/8	740,210	44.41
1/16	182,272	10.94
1/32	45,508	2.73

**Diaphragms, body and lining material to meet all conditions.** Bodies stocked in cast iron, malleable iron, stainless steel, bronze and aluminum (other materials on special order). Linings of lead, glass, natural rubber or neoprene. Diaphragm materials, natural rubber or synthetics. Write for the Grinnell-Saunders Diaphragm Valve Catalog.



# GRINNELL

Grinnell Company, Inc., Providence, R. I. Branches: Atlanta • Billings • Buffalo • Charlotte • Chicago • Cleveland • Cranston • Fresno • Kansas City • Houston • Long Beach • Los Angeles • Milwaukee • Minneapolis • New York • Oakland • Pocatello • Philadelphia • Sacramento • St. Louis • St. Paul • San Francisco • Seattle • Spokane



**Your "babies"**  
Stronger fastener-type  
parts at lower  
production cost by  
the Kaufman Process

• Check the possibility of having  
your special design formed and  
threaded parts made at Cleve-  
land by the Kaufman Double  
Extrusion Process. Get fast eco-  
nomical production (of production  
run items) and extra strength  
and precision. Send blue prints  
and specifications for estimate.

**THE CLEVELAND CAP SCREW COMPANY**  
2917 East 79th Street, Cleveland 4, Ohio  
Warehouses: Chicago, Philadelphia, New York

**CLEVELAND**  
*Top Quality*  
**FASTENERS**

ORIGINATORS OF THE  
**KAUFMAN DOUBLE EXTRUSION PROCESS**

Specialists for more than 30 years in  
**CAP SCREWS, SET SCREWS, MILLED STUDS**  
Ask your jobber for Cleveland Fasteners

#### FRANK PETTIT TO HEAD BALTIMORE ASSOCIATION

New officers of the Purchasing Agents Association of Baltimore recently elected, are:

Frank Pettit, president; William N. Francis, vice-president; William Franz, treasurer; R. A. Cadarette, secretary; William J. Young, national director; and A. J. Peroutka, alternate national director.

1 1 1

#### FORT WAYNE ASSOCIATION NAMES STREATOR PRESIDENT

William H. Streator, U. S. Rubber Company, was recently elected president of the Purchasing Agents Association of Fort Wayne.

Other officers elected are: E. A. Benz, vice-president; L. J. Brouwer, secretary; Frank Griffith, treasurer; Ray Laughlin, national director. New directors are A. A. Christen, H. J. Printz, G. R. Smith, and Howard Stewart. The new officers were installed at the June meeting.

1 1 1

#### MILLS CHOSEN PRESIDENT OF YOUNGSTOWN DISTRICT ASSN.

Roy Mills, Purchasing Agent of the General Fireproofing Company, was recently elected president of the Youngstown District Purchasing Agents Association. He succeeded Lynn L. Ransom, Purchasing Agent of Truscon Steel Co.

New directors chosen at the same time are W. N. Chill, G. D. Hopper and G. A. Renton, elected for two years, and W. P. Zarbaugh, one-year term. Directors who carry over are M. J. Chapman, C. A. Gabig of Warren, and G. R. McQuiston of Sharon.

1 1 1

#### ALLGEIER NAMED TO HEAD LOUISVILLE ASSOCIATION

Norbert J. Allgeier is the new president of the Purchasing Agents Association of Louisville for the year 1950-51. Elected to serve with Mr. Allgeier at a recent meeting of the group were: Hoyt Pritchett, first vice-president; Harry Horan, second vice-president; Floyd Cook, treasurer; Charles T. Hoertz, secretary; Arnold Laufer, assistant secretary. T. A. Corcoran, Elmer Meyer, and Robert Dilger were chosen directors.

1 1 1

#### NEW ENGLAND ASSOCIATION HOLDS ANNUAL SUMMER OUTING

The annual summer outing of the New England Purchasing Agents Association was held on Wednesday, June 28, at the Commonwealth Country Club. Buck Weaver headed the committee in charge, which also included Russ Allen, Bob Barker, Leo Cotton, Vince Godlesky, Paul Haskell, Don Holbrook, Ed Janse, Walter Kopke, Lou Little and Red Smalley.

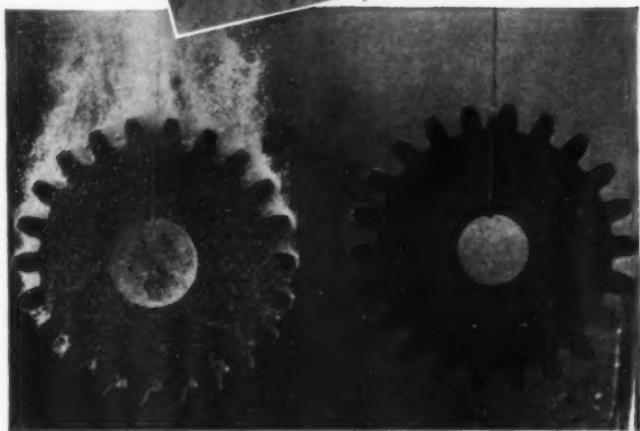
(Please turn to page 183)

# LIFE EXPECTANCY UNKNOWN

**ENRUP, new plastic by U. S. Rubber, outmodes present standards of endurance on many industrial applications**



**THE GEAR THAT LOVES WEAR!** One of the many uses of Enrup plastic, is this Enrup gear which has been operating for 6 months on a heavy-duty, 36-inch lathe without showing signs of wear. Other Enrup gears have been operating for as long as a year where ordinary metal gears have failed within a few days or weeks.



**NO BATH FOR A SISSY.** See how the 20 per cent solution of sulphuric acid eats away the steel gear at left, while the Enrup gear is unharmed. Enrup is the plastic that outwears steel, is non-conductive, non-absorbent, easy to clean, makes no noise when in operation. It has high tensile and impact strength, is unaffected by oils.



**A DESIGNER'S DELIGHT.** Just a few of the many products which have been molded for leading manufacturers out of Enrup. It can be made into almost any shape or form, punched, sawed, sanded, nailed, bolted, molded and machined. Smallest item weighs as little as one-third of an ounce. The largest? There's no size limitation.

Many a product is successful today because of Enrup. This new plastic is lightweight, rugged, handsome and highly workable, permits designing and engineering economies previously thought impossible. Can your product be improved by this versatile material? Our engineers will gladly tell you, at no obligation. Write to:

A PRODUCT OF

**U.S. RUBBER**  
SERVING THROUGH SCIENCE

**UNITED STATES RUBBER COMPANY**

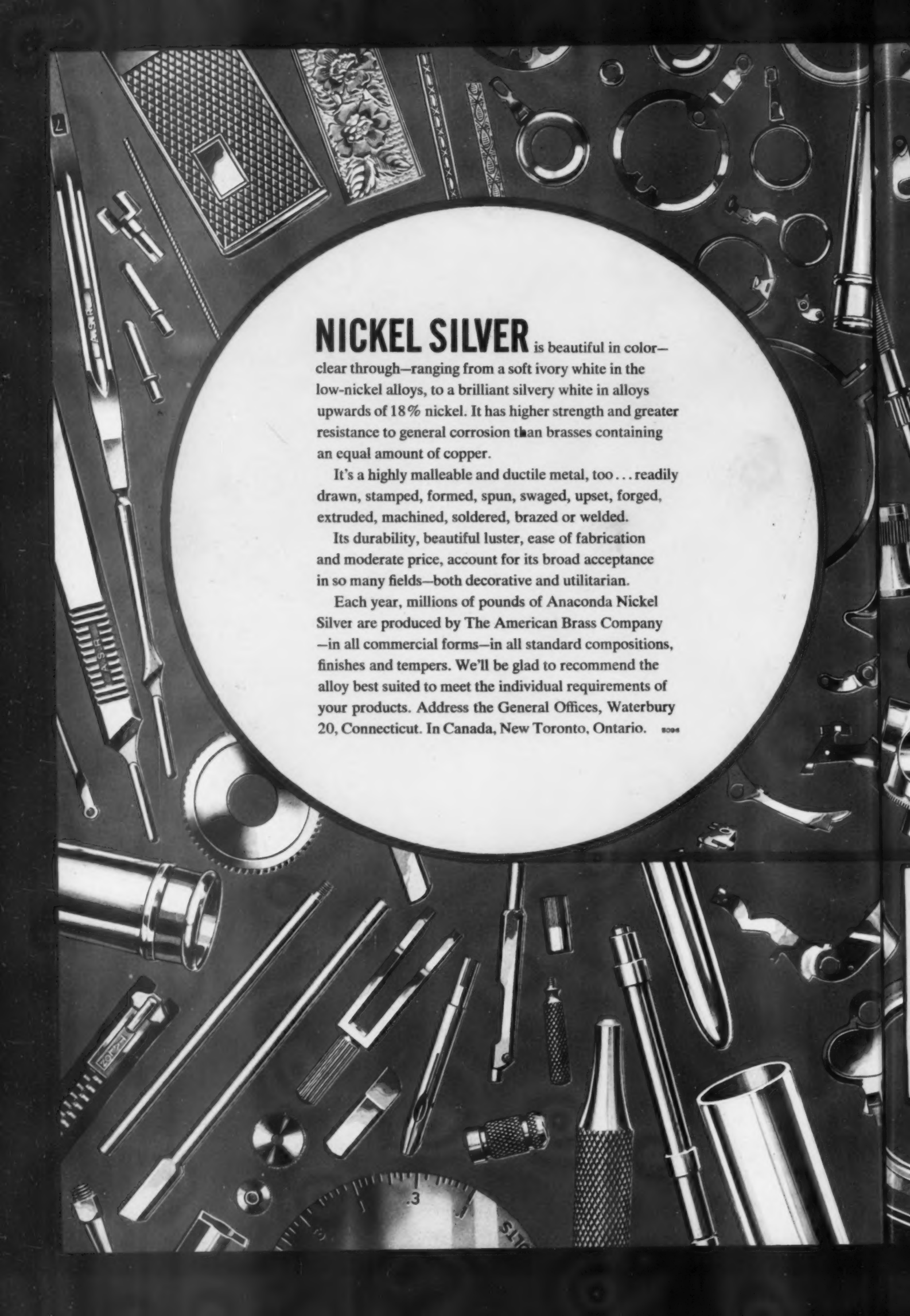
MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

JULY, 1950

*Want Additional Product Information? See Page 19.*

179





**NICKEL SILVER** is beautiful in color—clear through—ranging from a soft ivory white in the low-nickel alloys, to a brilliant silvery white in alloys upwards of 18% nickel. It has higher strength and greater resistance to general corrosion than brasses containing an equal amount of copper.

It's a highly malleable and ductile metal, too... readily drawn, stamped, formed, spun, swaged, upset, forged, extruded, machined, soldered, brazed or welded.

Its durability, beautiful luster, ease of fabrication and moderate price, account for its broad acceptance in so many fields—both decorative and utilitarian.

Each year, millions of pounds of Anaconda Nickel Silver are produced by The American Brass Company—in all commercial forms—in all standard compositions, finishes and tempers. We'll be glad to recommend the alloy best suited to meet the individual requirements of your products. Address the General Offices, Waterbury 20, Connecticut. In Canada, New Toronto, Ontario. 8096

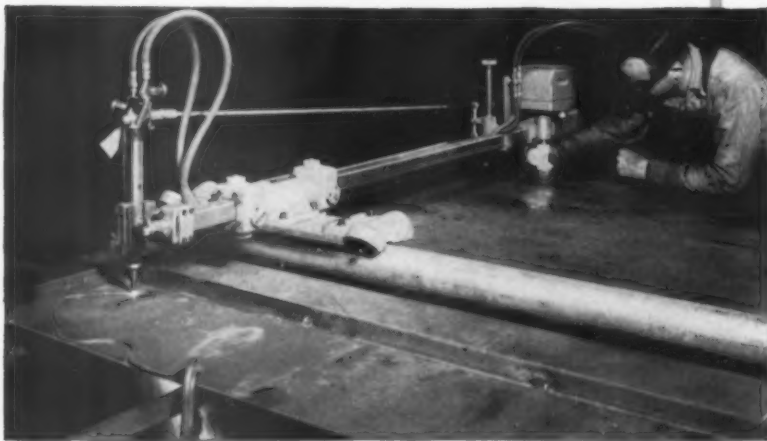


# ANACONDA

*the name to remember in* **NICKEL SILVER**

**SHEETS • WIRE • RODS • TUBES AND SPECIAL SHAPES**

"We can't say enough about Airco's NEW No. **3** Monograph . . .



its portability,  
accuracy and shape  
cutting versatility make  
it a **MUST** for every  
metal working shop..."

Says Mr. J. C. Hustad, President  
Hustad Company, Minneapolis, Minn.

Used for machine gas cutting of special structural shapes at Hustad, the Airco No. 3 Monograph has more than proved its ability to meet the demand for straight line, circle and bevel cutting, with an extremely high degree of accuracy.

Further, with a cutting area of 32 inches by 56 inches, it gives excellent results in cutting most any steel shape up to 8 inches thick . . . and a 6-foot 8-inch rail can be added, extending the cutting area indefinitely.

This NEW machine is the lowest priced machine of its type in the field (only \$695, including a manual tracing device, torch, tip, tubular rail, hose and carrying case). Also, it is portable—the machine itself weighs but 110 lbs. and the tubular rail 35 lbs. The entire unit is packed in a carrying case which can be conveniently handled by two men.

#### SPECIAL TRIAL OFFER

(Good in Continental U.S.A. Only)

If you would like to try this machine for two weeks *in your own shop on your own work*, just drop a letter to your nearest Airco office or authorized Airco dealer and they will advise you how a shop-trial can be arranged . . . or, if you would like a descriptive folder (ADC-660) they will be glad to send you a copy.



This shows a clevis for a steel mill guide cut from 6" plate—note the smoothness of the cut, reducing considerably machining cost and time.



## AIR REDUCTION

Offices in Principal Cities

Headquarters for Oxygen, Acetylene and Other Gases . . . Calcium Carbide  
Gas Cutting Machines . . . Gas Welding and Cutting Apparatus and  
Supplies . . . Arc Welders, Electrodes and Accessories.



## DAYTON ASSOCIATION HOLDS PICNIC AND GOLF PARTY

The annual picnic, golf party and dinner of the Purchasing Agents Association of Dayton was held at the Dayton Country Club on June 8. Gene Hack acted as chairman of the affair, assisted by a committee that included Joe Eismann, Ralph Miller, Don Delscamp, Ed Printz, and others.

Robert O. Long, recently elected president of the association, is Assistant Purchasing Agent for Standard Register Company. He has been active in association affairs since becoming a member in 1945, holding such positions as first vice-president, second vice-president, treasurer, program chairman, etc. He has been with Standard Register for 12 years, and prior to that time was with the Frigidaire Division of General Motors Corp. in Dayton.



Robert O. Long

Other new officers are: A. G. Ruediger, Airtemp Divn., Chrysler Corp., first vice-president; Harold L. Williams, Mound Laboratories, Monsanto Chemical Company, second vice-president; Edwin K. Griest, Buckeye Iron & Brass Works, secretary; W. R. Schurene, Ohmer Corp., treasurer; Paul Boorum, Moraine Products Divn., General Motors Corp., national director; and E. G. Sander, Central Research Laboratories, Monsanto Chemical Company, local director.

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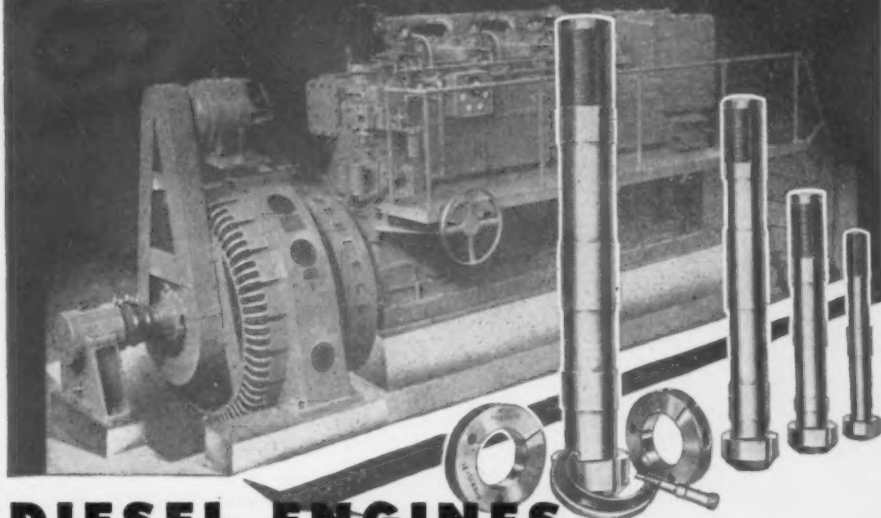
## WASHINGTON ASSOCIATION HOLDS FISHING PARTY

The annual fishing party of the Purchasing Agents Association of Washington was held Saturday noon, June 3 to Sunday evening, June 4 at Chet Holt's resort, Whidby Island. R. H. Miller was chairman of the affair, and Robert Brauer handled transportation in Seattle, and Robert Gruver in Tacoma.

Members of the association were guests of the Simpson Logging Company, Shelton, at a plant visitation held during May.

(Please turn to page 186)

## ERIE BOLTING on



## DIESEL ENGINES

For over 30 years ERIE has manufactured bolts and studs to the specifications of Diesel Engine builders. This specialized experience gained in working with leading Diesel designing engineers assures you of getting the

exact materials and the precise tolerance in bolting desired for your Diesel. Send us your specifications for Diesel Connecting Rod Bolts, Cylinder Head Studs, and other special bolting. Write for new price and data book.



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would you pay \$22.00  
a gallon for floor wax?

Don't be too sure you're not paying that much right now! Regardless of what the floor wax itself costs you, that represents only a fraction of your total floor maintenance costs. Applying the wax costs 10 times as much! Gerson-Stewart has compiled an interesting down-to-earth analysis that examines your present floor maintenance costs and demonstrates how they could be materially reduced. Send for your free copy of this folder and determine the important savings that Gerson-Stewart's new Super Swiftsheen could mean to you. For actual performance records show that Super Swiftsheen reduces the frequency of floor waxing by at least 1/2, in many cases by 2/3.



Write Today for FACT PACKED Booklet

PROVES YOUR FLOOR WAX COSTS  
AS MUCH AS \$22.00 PER GALLON

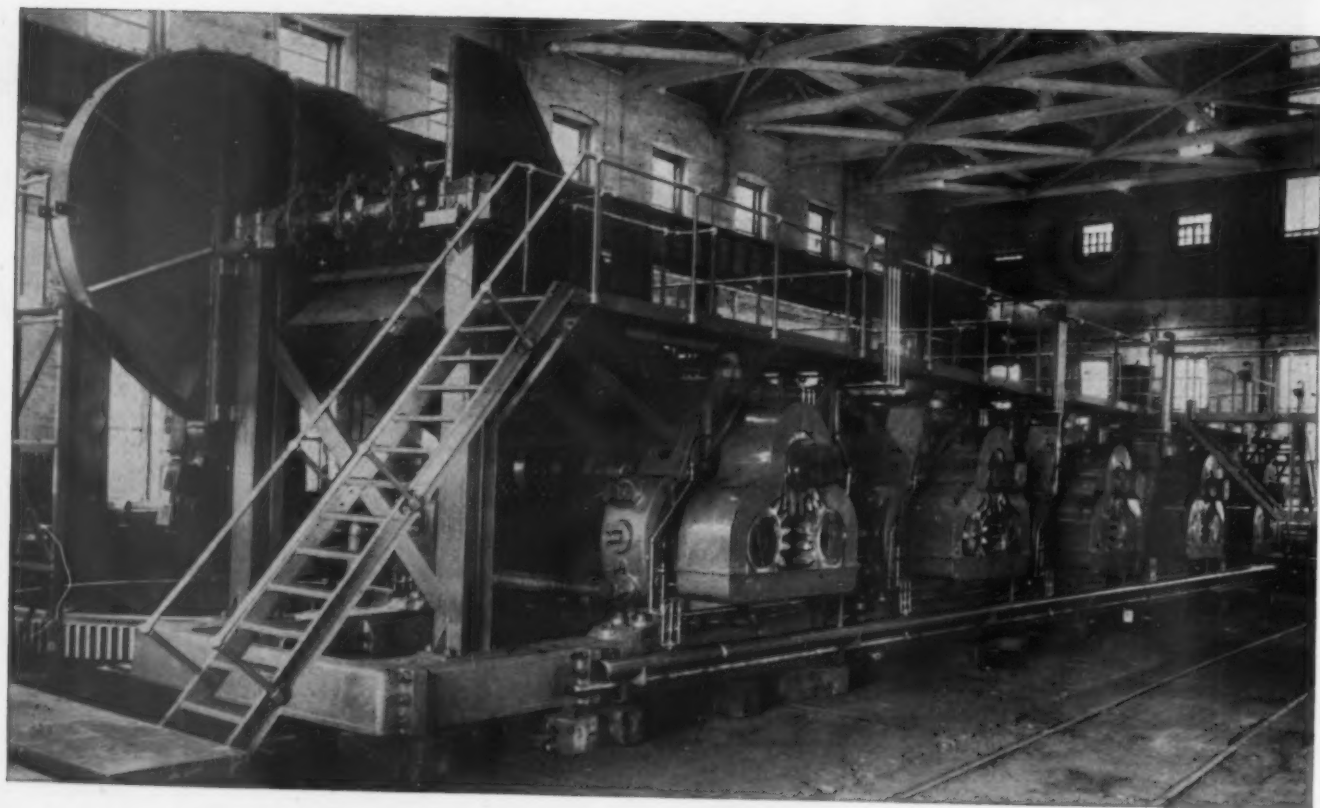
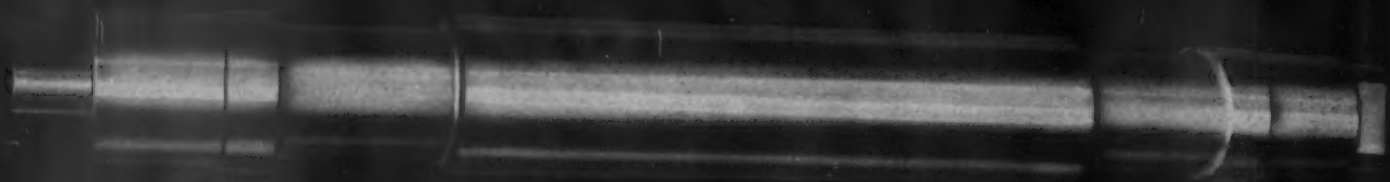


The GERSON-STEWART Corp.  
LISBON ROAD • CLEVELAND, OHIO



# STANDARD ROLLS

*do a "Sweet Job" here*



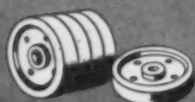
## NOTICE—DESIGN AND PURCHASING DEPARTMENTS

Standard Steel Works Division is equipped to produce all varieties of forged rolls, up to 25 tons in weight, that can be formed under a press or hammer.

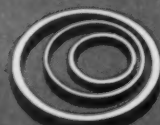
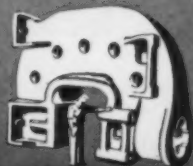
Rolls can be specified rough; semi-finished; or finished machined. Facilities permit the turning of cylindrical parts up to 50 feet in length.

## STANDARDIZE ON STANDARD FOR

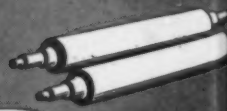
STEEL CASTINGS



WHEEL MILL PRODUCTS



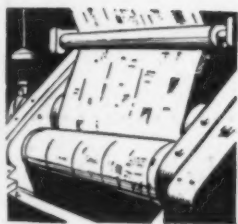
WELDLESS RINGS



FLANGES

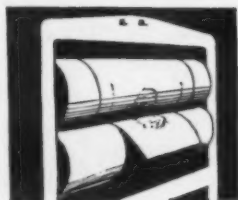
The B  
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... (and Everywhere)



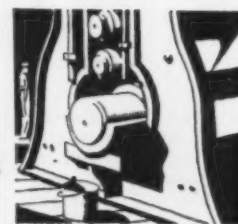
#### PRINTING PRESS ROLLS

The dual need for complete reliability and extreme precision in rolls for modern high-speed printing presses is adequately met by Standard products. They are making news on the presses of publishers throughout the country.



#### ENGRAVING ROLLS

Engraving rolls must have a flawless surface to take the design . . . and unusual wear-resisting qualities to retain it. The close control that safeguards every step in the production of Standard Rolls fits them to meet the severe requirements of this service.



#### PAPER MILL ROLLS

The finish on the web of paper that spins out of giant paper-making machines depends to a large extent on the finish on the roll. Standard's method of manufacture produces the homogeneous structure that permits development of a mirror-smooth surface.

If the equipment you build, or the equipment you operate, demands rolls with unusual strength or stamina—why not check up on what Standard has to offer? We make our own steel in acid open-hearth furnaces (which are among the largest tilting-type units in the country) and so can control analysis and quality right from the start. Our forging equipment permits thorough working of pieces up to 25 tons in weight. And our complete, modern heat-treating facilities can supply an important "plus" to the desirable properties of the roll.

The sugar mill illustrated is just one of the examples of heavy-duty equipment that can perform to capacity because of the dependability of Standard Rolls.

The Baldwin Locomotive Works, Standard Steel Works Division, Burnham, Pa., U. S. A. Offices: Chicago, Cleveland, Houston, New York, Pittsburgh, San Francisco, St. Louis, Washington.

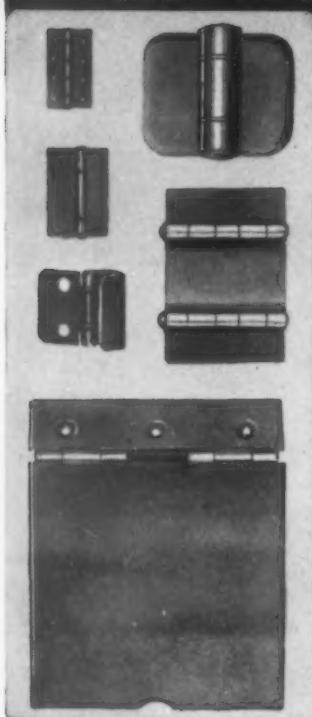


# BALDWIN

## STANDARD STEEL WORKS DIVISION



## Why it pays to have STANLEY make YOUR SPECIAL HINGES



● As the world's largest producer of hinges, Stanley is geared for top-efficient production. You merely specify. Stanley does the rest — from first sketch to finished product.

Whether you want limited or quantity production, you have the advantage of expert attention by Stanley designers and production engineers . . . the use of Stanley research and tool-making facilities . . . and the choice of the particular plating or finish best suited to your product because Stanley is in a position to supply all types. Write today for information — not only for special hinges but for deep drawings and stampings as well.

### THE STANLEY WORKS . . . PRESSED METAL DIVISION

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New York San Francisco  
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Reg. U.S. Pat. Off.

HARDWARE, TOOLS, ELECTRIC TOOLS, STEEL STRAPPING, STEEL

### W. R. HENRY NEW PRESIDENT OF COLUMBUS ASSOCIATION

W. R. Henry, Columbus & Southern Ohio Electric Company, was recently elected president of the Purchasing Agents Association of Columbus.

Other officers also elected are: C. A. Lane, Jeffrey Manufacturing Company, national director; Ross Tague, Osborne & Sexton Machine Company, vice-president; R. A. Brown, General Electric Supply Company, treasurer; Lester Smith, Graybar Electric Company, secretary; and H. L. Winger, Cooper-Bessemer Corp., and W. H. Canter, Columbus Bolt & Forging Company, local directors.

1 1 1

### EASTERN N. Y. ASSOCIATION POLLS MEMBERS ON TOPICS

The Purchasing Agents Association of Eastern New York has begun to poll its members on the subjects they are most interested in hearing discussed at the group's meetings. R. M. Bleak, chairman of the commodity committee, in an accompanying letter has pointed out that many changes have occurred in various commodities since the last poll, and members may be desirous of having new ones added or old ones dropped.

Members are also asked to give their help in making commodity forum presentations at the meetings, by giving an occasional 5 or 10 minute report on some commodity or commodities in which they are interested.

(Please turn to page 188)



## They look alike But!... THERE IS A DIFFERENCE

Like eggs — gummed tapes may look alike in the roll but there can be a whale of a difference. In eggs its taste — in tape its performance. **Safetex** selected strong, tough base stock, special quick acting glue, cracked glue surface, herringbone tread — all guarantee the peak of performance. Besides the patented pull tab opener in every roll saves time and tape.

**CENTRAL PAPER CO., MENASHA, WIS.**

**USE GUMMED TAPE! No other closure  
does so much for so little.**

**SAFETEX  
GUMMED TAPE**



## Safe, Handy, Quiet FOLDING CHAIR

### American Folding Chair No. 43

Formed steel seat and back. Triangular reinforced tubular steel frame; solid-steel cross braces. Dipped, baked-enamel finish. Replaceable rubber feet.



For every industrial need—in cafeterias, recreation rooms, or assembly rooms—this is the perfect folding chair! Safe—can't tip in use. No snagging, pinching, or soiling hazards. Folds quickly and quietly. Light and compact, easy to carry and store. Easy on the budget, too. Write for full information.

Also with wood seat—American Folding Chair No. 44, same advantages plus five-ply, urea-resin-bonded hardwood seat, durably lacquered. (And No. 47, upholstered in brown imitation leather.)

**American Seating Company**

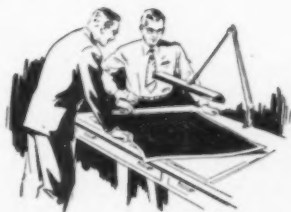
**WORLD'S LEADER IN PUBLIC SEATING**  
Grand Rapids 2, Michigan

Branch Offices and Distributors in Principal Cities

**Do The Job Best—  
With The Best Tubing  
For The Job – Contact**

# GLOBE

**A Leading and  
Specialized Producer  
of Steel Tubes**



Globe engineers are at your service to assist in the selection of tubing to help you improve your product — increase production — lower your costs.

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- **CARBON STEELS**
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- **HIGH PURITY IRON**  
(Globeiron)
- **AIRCRAFT**
- **MECHANICAL • PRESSURE**
- **SPECIAL SMOOTH  
INSIDE FINISH**
- **CORROSION RESISTANT  
ANALYSES**
- **FOR HIGH TEMPERATURE  
SERVICE**
- **STANDARD AND  
SPECIAL ANALYSES**
- **STANDARD AND SPECIAL  
SHAPES AND FORMS**

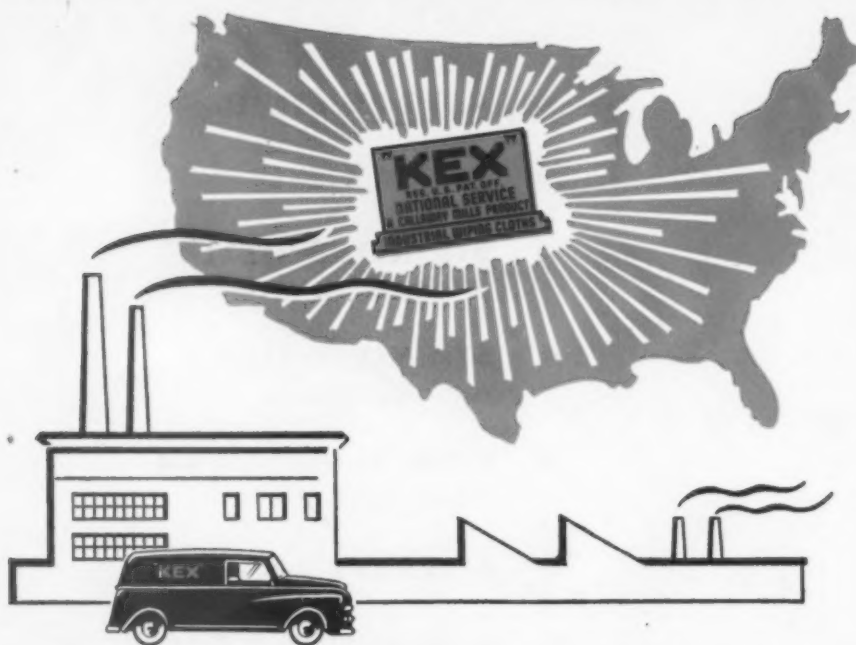
Globe Steel Tubes Co. specializes in the manufacture of tubing. Advanced machinery and methods characterize all mill operations. This concentration of facilities provides a uniform quality of product and dependable source of supply. Write for the Globe general catalog.

**GLOBE STEEL TUBES CO., Milwaukee 4, Wis.**

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# KEX INDUSTRIAL WIPING TOWELS



## ARE DISTRIBUTED NATIONALLY

Regardless of where your plant is located, whether large or small, there is a KEX Distributor near you.

**Plant Managers like KEX Service** because it fits so well into their plan for smooth, efficient plant operation—for better housekeeping.

**Plant Engineers like KEX Industrial Towels** because they are *made* for wiping—safe to use... have no ragged edges to get caught in machinery... so soft they will not mar delicate surfaces nor leave excessive lint.

**Purchasing Agents like KEX Service** because it provides a constant, reliable, orderly source for clean, absorbent wiping towels.

**Employees like KEX Towels** because they are *real* wiping cloths, not makeshifts—are good tools with which to do a faster, more efficient wiping job—always the same size, bound for safer use, scientifically clean and readily available.

Follow the lead of industrial leaders who overlook no opportunity to keep operating costs down—and efficiency up. Insist on KEX Industrial Wiping Towels.



**Nothing to buy—no expensive inventory—just a low monthly rental.** Look in your classified telephone book for nearest KEX distributor, or write KEX NATIONAL SERVICE, 295 Fifth Avenue, New York 16.

# "KEX" NATIONAL SERVICE

REG. U.S. PAT. OFF.



## HAWAII ASSN. HEARS FORMER STATE P.A. OF CALIFORNIA

J. Fred Misphey, until his recent retirement Purchasing Agent for the State of California, was an informal guest speaker at a recent dinner meeting of the Purchasing Agents Association of Hawaii held at the Armed Forces Officers Club in Honolulu.

Mr. Misphey described the gradual transition from departmental to centralized state purchasing, in which he was a central figure, from the time he entered state service in 1911. When the state finally assumed full control of all buying, he stated, the net saving realized was 47%. In the last year before his retirement, Mr. Misphey's office placed orders amounting to over \$54,000,000. His departmental cost covering the handling of this sum was six tenths of one per cent.

H. F. Cullen, chairman of the educational committee, presented a film entitled "Aluminum". It showed the various manufacturing processes involved in transforming the metal from ore to finished product.

1 1 1

## SOUTH BEND ASSOCIATION HAS LAST MEETING FOR THIS YEAR

The Purchasing Agents Association of South Bend met at the Orchards Hills Country Club Niles, Mich., on Thursday, June 8, for the closing meeting of the fiscal year.

Golf, with prizes for both "experts and duffers", was the feature of the afternoon program. A business meeting was held following dinner. As a part of the meeting members expressed their "gripes" or satisfaction with the various activities conducted during the year.

New officers recently elected, and installed at the meeting, are: G. L. Madigan, Oliver Corp., Plant No. 2, South Bend, president; C. M. Hayes, American Coating Mills, Elkhart, vice-president; R. A. Geyer Mastic Asphalt Corp., South Bend, secretary-treasurer; J. A. Mogle, National Standard Co., Miles, national director.

1 1 1

## A. G. HOPCRAFT SPEAKER AT ST. LOUIS ASSN. MEETING

The Purchasing Agents' Association of St. Louis held its monthly meeting May 23, at the Sheraton Hotel. The featured speaker of the evening was A. G. Hopcraft, who besides being very entertaining had a very good message about "Purchasing for Production."

Lee Bussmann and Mark Covell conducted a forum on "Buying Know-How for Non-ferrous Metals and Fuels." John Pratt showed a film on "Drilling and Processing Oil." Jim Tyler, of the Gruendler Crusher Company, held forth in the "Know Your Member Company" department. Fred Risberg had a fast moving Commodity Report for the general assembly. Al Soell reported on the District Three Conference Meeting.

(Please turn to page 190)





## UNIFORM IN GAUGE

Chase sheet brass is precision-checked, both manually and electronically, to make sure it stays within specified tolerances.

## UNIFORM IN TEMPER

Controlled annealing processes give you quality metal with the fine temper and high degree of workability that you want.



## UNIFORM IN SURFACE

Roll after roll and sheet after sheet of Chase brass has the same smooth clean surface and uniform rich color . . . gives you better brass for your products.



**You get all 3 with CHASE BRASS SHEET**

Yes, Chase means accurate widths, straight edges and flat surfaces . . . whether you're buying sheet brass or bronze or any other copper alloys in strips or rolls. You *always* benefit from Chase's manufacturing "know how" and years of experience. You'll find you *can't* do better elsewhere.

Mill-size orders given prompt and careful attention—smaller orders can usually be filled directly from stock by any of the 23 conveniently located Chase warehouses.

# Chase



*the Nation's Headquarters for*  
**BRASS & COPPER**

WATERBURY 20 CONNECTICUT

SUBSIDIARY OF KENNECOTT COPPER CORPORATION

THIS IS THE CHASE NETWORK . . . handiest way to buy brass

ALBANY† ATLANTA BALTIMORE BOSTON CHICAGO CINCINNATI CLEVELAND DALLAS DENVER† DETROIT HOUSTON† INDIANAPOLIS KANSAS CITY, MO. LOS ANGELES MILWAUKEE  
MINNEAPOLIS NEWARK NEW ORLEANS NEW YORK PHILADELPHIA PITTSBURGH PROVIDENCE ROCHESTER† ST. LOUIS SAN FRANCISCO SEATTLE WATERBURY (†Sales Office Only)

# Fast, easy BOLT THREADING

## Announcing Handy New RIGGID Bolt Dies



"Good idea—this carrier for bolt die sets—makes 'em hard to lose."



No. OOR-B— $\frac{1}{4}$ " to 1"  
National Coarse and  
Fine Thread.

● You're ready to thread bolts fast with these new **RIGGID** Bolt Dies. Dies easily reversed for threading close to bolt head. No adjustment needed for standard threads—adjust easily for undersize and oversize threads. Special steel dies, precision cut for long service. If you have a **RIGGID** OOR, buy bolt die heads alone, they fit OOR drive ring . . . an extra economy. Buy this new **RIGGID** at your Supply House.



New **RIGGID** 3-Way  
Bolt Die No. 33-B—  
Handy tool for  $\frac{3}{8}$ ",  
 $\frac{1}{2}$ ",  $\frac{3}{4}$ ".

# RIGGID

WORK-SAVER PIPE TOOLS

THE RIDGE TOOL CO. • ELYRIA, OHIO

### DALLAS ASSOCIATION SEES FILM ON AUTO MANUFACTURE

A regular meeting of the Purchasing Agents Association of Dallas was held on Thursday, May 25, at the Melrose Hotel.

Feature of the program was a moving picture entitled "The Human Bridge". The film depicts the evolution of the automobile from the design stage through the finished product. It was produced by the Ford Motor Company. John Phipps acted as master of ceremonies.

Jack B. Look, Jr., an authority on the findings and recommendations of the Hoover Committee on Reorganization of the Executive Branch of the Government, was the guest speaker at the association's first May meeting.

1 1 1

### RHODE ISLAND ASSOCIATION ELECTS NEW OFFICERS

New officers for the coming year were elected at the May 22 meeting of the Rhode Island Purchasing Agents Association, held in the Sheraton-Biltmore Hotel, Providence.

Elected to head the group were: J. Joseph Fogarty, president; Howard R. Smart, Jr., first vice-president; Walter G. Barney, second vice-president; Arnot Hirst, secretary-treasurer; F. C. P. Drummond, national director; Kenneth W. Douglas, Morris Martin, William F. O'Brien, and William F. Rayment, directors.

The annual meeting of the association was held on Friday, June 23, at the Wannamoisett Country Club.

1 1 1

### CONNECTICUT HOSPITALS PLAN PURCHASING ASSOCIATION

Plans for a state association composed of purchasing agents from hospitals in the state of Connecticut were revealed at a recent meeting of the purchasing institute of the state hospital association.

Rev. Lawrence E. Skelly, president of the Connecticut Hospital Association, said the success of four meetings of the institute had led to an informal organization which is expected to become a permanent group some time in the fall.

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### SYRACUSE & CENTRAL NEW YORK ASSN. HEARS TALK ON IRON

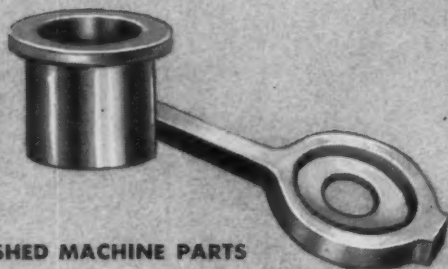
A regular meeting of the Purchasing Agents Association of Syracuse and Central New York was held on May 24 in the Onondaga Hotel, Syracuse.

Guest speaker was Frank O. Parker, vice-president and sales manager of The Dayton Malleable Iron Company, former president of the Malleable Founders Society, and currently a member of its board of directors. Mr. Parker gave the story of malleable iron and presented a moving picture entitled "This Moving World".

(Please turn to page 192)

# QUALITY

OIL-CUSHIONED  
BEARINGS



FINISHED MACHINE PARTS

- ★ 20 years of production experience.
- ★ New plant and equipment.
- ★ Virgin materials of highest purity.
- ★ Recognized management and technical personnel.
- ★ Electronic inspection devices and quality control.

# SERVICE

- ★ Extensive staff of home office and field engineers.
- ★ Batteries of presses and other equipment for quick service.
- ★ Production tools for more than 25,000 different finished products.
- ★ 3000 additional engineers for consultation on technical problems.
- ★ Depots in every state and throughout Canada for on the spot service.

PERMANENT FILTERS



CORED AND BAR STOCK

# OILITE

**AMPLEX MANUFACTURING COMPANY**

**SUBSIDIARY OF CHRYSLER CORPORATION**

**DETROIT 31, MICHIGAN**

**CONTACT OUR LOCAL FIELD ENGINEER OR HOME OFFICE**





Style No. L2  
With Nylon Cups

**One Source For All Your  
Eye Protection Needs**

# WILLSON



Style No. CC60  
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Style No. TAW51  
For Heavy Duty

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**WILLSON**  
Dependable Products Since 1870  
\*T.M. Reg. U.S. Pat. Off.



### Comfort • Size • Safety

For workers on heavy duty jobs; in hot or dusty work; exposed to chemical splash—any hazardous job—you can get what you need from WILLSON. Not only that, but every type has comfort features that help get safety equipment worn; and all have reliable WILLSON Super-Tough\* lenses. For help in selecting exactly the right equipment for your needs, ask our nearest distributor for our new catalog—or write direct to WILLSON PRODUCTS, INC., 221 Washington St., Reading, Pa.

### YOUNGSTOWN DISTRICT ASSN. ELECTS MILLS PRESIDENT

Roy Mills, Purchasing Agent, General Fireproofing Company, was elected president of the Youngstown District Purchasing Agents Association at a recent meeting. New directors for two years, elected at the same time, are: W. N. Chill, Director of Purchases and Traffic, Automatic Sprinkler Company of America; G. D. Hopper, Purchasing Agent, McKenzie Muffler Company; G. A. Renton, Purchasing Agent, Lombard Corporation. W. P. Zarbaugh, Cold Metal Process Company, was elected a director for one year.

### NEW OFFICERS ELECTED BY LOS ANGELES ASSN.

New officers for the year 1950-51 were chosen at a recent meeting of the Purchasing Agents Association of Los Angeles. Virgil D. Waters, Utility Trailer Mfg. Co., was elected president.

Others named are: Fred V. Keenan, Keenan Pipe & Supply Co., first vice-president; Frank D. Lortscher, Signal Oil & Gas Co., second vice-president; W. T. Reynolds, Los Angeles Transit Lines, David L. Wilt, University of California, and Burt H. Pulver, Barker Bros. Corp., directors. C. H. Tuttle, Standard Oil Company of California, was named as national director. Arthur Baker is executive secretary.

The new officers were inducted at the close of the June 22 monthly dinner meeting.

(Please turn to page 194)

**YOUR FREE  
COPY IS READY—**



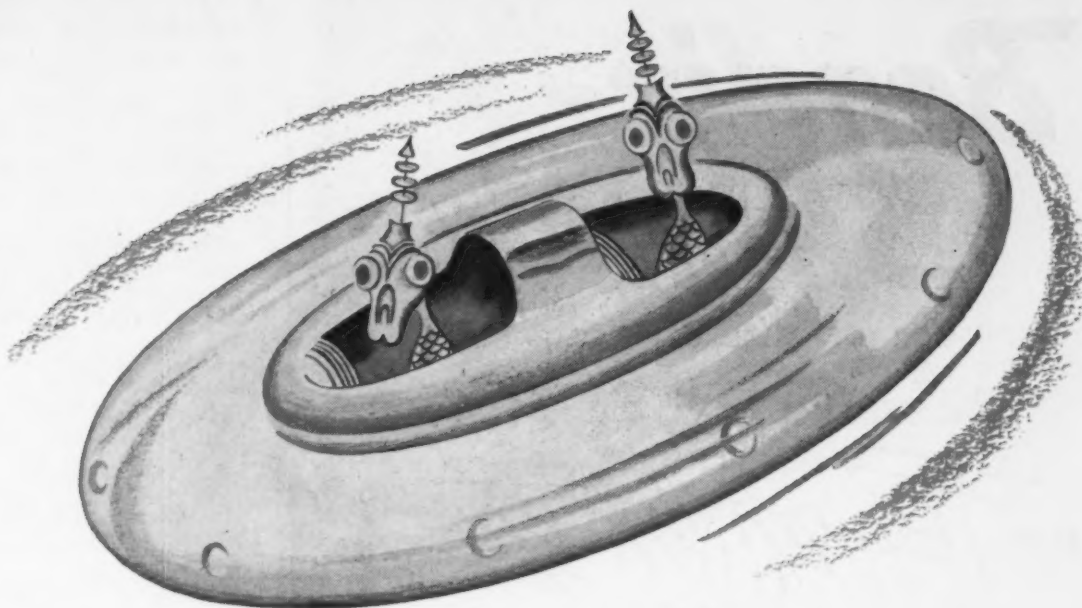
**TO  
SAVE  
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TIME  
AND  
TROUBLE**

**SCREWS • BOLTS  
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SCREW MACHINE PRODUCTS  
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**A T L A S**  
SCREW & SPECIALTY CO.  
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# What are the facts about discs?

MEN FROM MARS!

ENEMY AIRCRAFT!

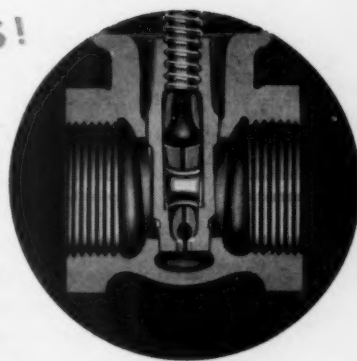
SECRET WEAPONS!

Mention the word DISCS today, and your listener gets a confidential look in his eye. Then lowers his voice and lets you in on some secret government information that his brother-in-law got from a man at the office who lives next door to a family whose son is in boot training.

Now, we don't have any inside dope on flying discs, but if you are a user of industrial valves, we do have some very important facts about the discs used in Ohio Brass gate valves. Our engineers have produced a hollow, cored disc which has the strength of a solid wedge, yet is sufficiently flexible to adjust itself to minor irregularities of the valve seat. This flexibility nullifies any slight misalignment and permits all-around contact of the seating surfaces.

O-B gate valves featuring the Flexitite Disc\* are available in sizes up to 3 inches, and pressures from 100 pounds WSP to 200 pounds WSP. Your local Ohio Brass distributor also stocks a complete line of bronze valves, including standard pressure globes, checks and special valves.

OHIO BRASS COMPANY, MANSFIELD 4 OHIO



O-B FLEXITITE DISC\*

Two posts join disc faces to provide solid strength of wedge, but allow sufficient flexibility to permit disc to adjust itself to the slight irregularities of the seat.

\* Registered U. S. Patent Office.

4018-V

No. 20  
125 lbs. WSP



No. 21  
125 lbs. WSP



No. 28  
125 lbs. WSP



No. 29  
125 lbs. WSP



No. 22  
150 lbs. WSP



No. 23  
150 lbs. WSP



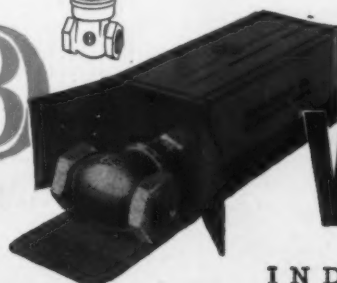
No. 26  
200 lbs. WSP



No. 27  
200 lbs. WSP



**Ohio Brass**



**VALVES**

FOR DOMESTIC AND

INDUSTRIAL USE

# Bendix-Skinner

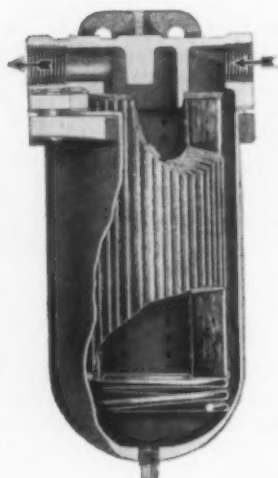
ORIGINATOR OF MICRONIC FILTRATION

Results Prove It

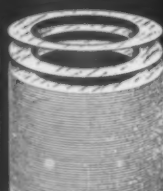
the *Finest*

Name in Filtering

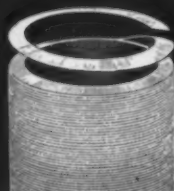
Nine times out of ten **Bendix-Skinner** Filters will supply the "finest" answer to your filtration problems. Here are the facts: available with patented, exclusive, resin impregnated cellulose elements; simple, quick replacement; high flow rate with minimum pressure loss; no channeling or bypassing; over 350 models providing filtration from  $\frac{1}{2}$  micron (.000019") upwards at flow rates from 1 to 5000 g.p.m. Why not let **Bendix-Skinner** filtration engineers work with you? Write us direct.



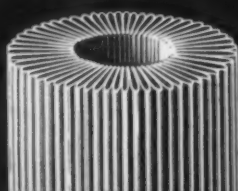
Model 3110-P filter element,  $6\frac{1}{8}" \times 3\frac{1}{2}"$ , has a filtering area of 940 sq. in.



Disc-type



Ribbon-type



Pleated-type

SKINNER PURIFIERS DIVISION OF

1503 TROMBLY AVENUE, DETROIT 11, MICHIGAN

Export Sales: Bendix International Division, 72 Fifth Ave., N. Y. 11, N. Y.



## KRAMPERT NEW PRESIDENT OF OKLAHOMA CITY ASSOCIATION

H. A. Krampert, manager of purchasing, traffic and transportation of the American Body and Trailer Company has been elected president of the Oklahoma City Purchasing Agents Association.

Other officers chosen are: J. D. Baker, Stanolind Oil & Gas Company, first vice-president; Fred B. Wood, Black, Sivalls & Bryson, second vice-president; R. C. Arnold, Anderson-Prichard Oil Corporation, secretary; Ray Simms, Southwest Wheel, Inc., treasurer; V. D. Bradshaw, American Iron & Machine Works, alternate national director.

1 1 1

## LETTER TO SUPPLIERS MAKES FOR SAVINGS

The accompanying letter, seeking co-operation of suppliers and vendors looking to lower costs was prepared about a year ago by R. T. Phipps, purchasing agent, The Bullard Co., Bridgeport, Conn., and was mailed with purchase orders for a period of three or four months. Though there was considerable duplication, Mr. Phipps states that the letter had the desired effect and resulted in considerable savings. As an example, the manufacturer of a cleaning compound, upon receipt of the letter 'phoned Mr. Phipps, stating that though he was unable to reduce the price of the cleaning material, which is shipped in steel drums, that he could reduce the price by  $\frac{1}{2}\epsilon$  per pound if thinner gauge steel drums were acceptable. Inasmuch as the drums were not returnable, there was no objection to the use of the thinner gauge drum. In this instance, Mr. Phipps points out, the letter brought out the fact that the manufacturer had drums of different gauges.

Following is the letter, which is directed "To All Suppliers and Vendors of the Bullard Company", duly signed by Mr. Phipps:

"The enclosed order is tendered in sincere appreciation of the cooperative service rendered during the difficult period of scarcity and, as well, for the splendid relationship that has been ours over the past years.

"Scarcity is fast being supplanted by adequate supply and we know you will agree that competitive quotations are now the order of the day. Under such circumstances, we, like yourselves, are obliged to consider attractive competition, particularly when it will enable us to reduce cost factors which, in turn, reflect our own competitive position in the sale of our own products.

"It is clear to us that the need for constant check of cost factors is the vital factor of survival in this period of adjustment; and this is our reason for herein requesting your cooperation to the end that your adjusted cost-factors will competitively reflect your future quoted-prices (increased or decreased) to enable us to fairly consider the many

(Please turn to page 196)



# Not One Cent for Maintenance IN 14 YEARS OF SERVICE



Circular Saw Hardening Furnace after 14 years of service—center door partly open.

THAT'S THE RECORD of B&W Insulating Firebrick in Henry Disston and Sons, Inc. circular saw hardening furnace. During 14 years, this furnace handled hundreds of tons of high grade steel. *Despite this grueling punishment, the original walls and roof of B&W Insulating Firebrick are still giving excellent service.*

B&W IFB not only made possible continuously high production, but also assured better quality control . . . due to the quick response of this brick to temperature changes. And because B&W IFB have such a very high insulating value, the fuel savings over the 14 year period were appreciable.

Performance pays off. As a result of this performance, Disston has since lined ten more furnaces of different types with B&W IFB. If you, too, want to increase furnace operating efficiency and lower production costs, discuss your refractory problems with your local B&W representative.



One of the three new Bar Heating Furnaces.



New Bar Heating Furnace under construction with B&W Refractories.

## Furnace Specifications

Span of arch 13 ft. consisting of 9 in. K-26 IFB

Length of furnace 15 ft. 6 in.

Height of furnace from hearth to top of arch 2 ft. 6 in.

Side walls and doors 9 in. K-26 IFB



# BABCOCK & WILCOX

THE BABCOCK & WILCOX CO.  
REFRACTORIES DIVISION  
GENERAL OFFICES: 85 LIBERTY ST., NEW YORK & N.Y.  
WORKS: AUGUSTA, GA.

R-367

**B&W REFRACTORIES PRODUCTS**—B&W 80 Firebrick • B&W Junior Firebrick • B&W 80 Glass Tank Blocks • B&W Insulating Firebrick  
B&W Refractory Castables, Plastics and Mortars • **OTHER B&W PRODUCTS**—Stationary & Marine Boilers and Component Equipment . . .  
Chemical Recovery Units . . . Seamless & Welded Tubes . . . Pulverizers . . . Fuel Burning Equipment . . . Pressure Vessels . . . Alloy Castings



**CLEVELAND CONTAINERS**  
**combine Strength . . . Rigidity . . .**  
**Attractiveness**

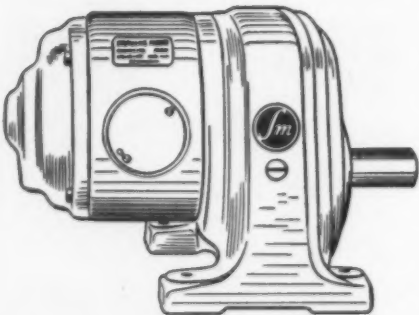
Our large production capacity and conveniently located plants ensure prompt customer service at low cost.

Consult us on our many types of combination metal and paper cans, fibre and paper cans . . . paper, fibre and plastic tubes . . . cores . . . and mailing cases.

Ask for our special folder giving details.

*The* **CLEVELAND CONTAINER Co.**  
 6201 BARBERTON AVE. CLEVELAND 2, OHIO  
 • All-Fibre Cans • Combination Metal and Paper Cans  
 • Spirally Wound Tubes and Cores for all Purposes

PLANTS AND SALES OFFICES: Cleveland, Detroit, Chicago, Plymouth, Wisc.,  
 Jamestown, N. J., Ogdenburg, N. Y. • ABRASIVE DIVISION at Cleveland  
 SALES OFFICES: Grand Central Terminal Bldg., New York City, Washington  
 Gas Light Bldg., Washington, D. C.; West Hartford, Conn.; Rochester, N. Y.  
 Cleveland Container Canada, Ltd., Prescott, Ontario • Offices in Toronto and Montreal



**PORTRAIT OF A PROFIT**

For greater profits, use Sterling Slo-Speed Electric Power Drives

**STERLING**  
 ELECTRIC MOTORS

PLANTS: NEW YORK 51, LOS ANGELES 22, HAMILTON, CANADA—OFFICES IN PRINCIPAL CITIES

Write for Bulletin

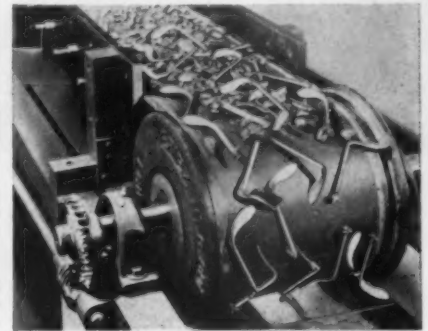
SLO-SPEED (Geared) • SPEED-TROL (Variable Speed) • KLOSD (Normal Speed)

(Continued from page 194)  
 competitive quotations that are now being represented by those desirous of serving us.

"We are mailing this letter with our purchase orders as we feel it is the most economical way of doing it and will continue this method for a period of 30 to 90 days. Your comments will be appreciated."

### MAGNETIZED PULLEY SPEEDS UP PRODUCTION 1200%

The accompanying illustration shows application of permanently magnetized pulley made by the Eriez Manufacturing Co., Erie, Pa., for the completely automatic separation of ferrous metal from tumbling stones after deburring and polishing of typewriter parts, in plant of the L. C. Smith & Corona Typewriter Com-



Magnetized pulley eliminates use of screens or hand magnet to separate metal parts from tumbling stones.

pany. The installation of the pulley eliminated completely the original procedure of using screens or a hand magnet to effect the separation. Over a period of many months it was calculated that savings were substantial, and that production speed-up had amounted to 1200 per cent.

### REVOLUTIONARY ANTI-STATIC AGENT FOR POLYSTYRENE PLASTIC

A new and totally different anti-static agent for polystyrene plastic, trade marked D-Stat B, is now available.

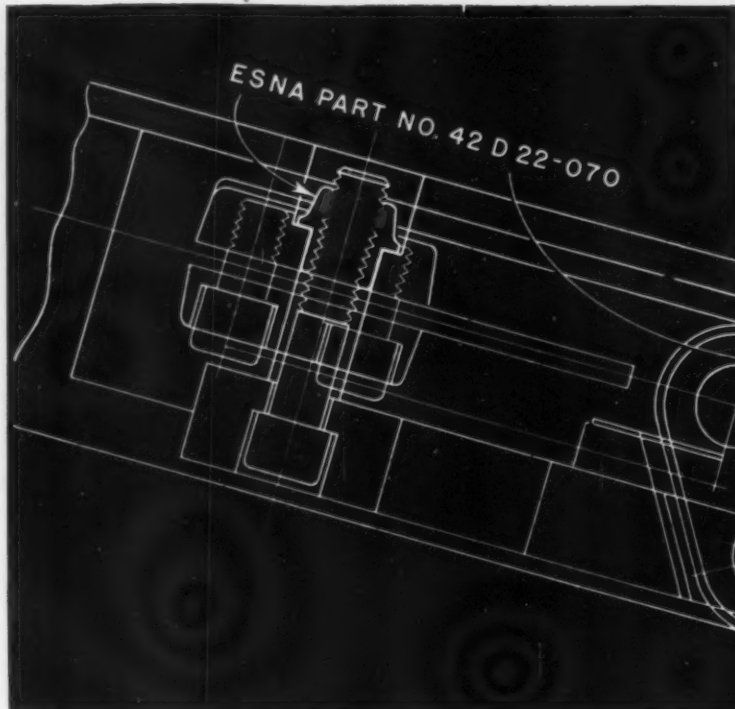
D-Stat B is the result of intensive research to develop a material which will entirely eliminate unsightly dust collection due to static attraction. It is unique among destaticizers in that it will visibly enhance and preserve the brilliance of polystyrene items, such as: radio cabinets, housewares, fluorescent lighting fixtures, plastic wall tile, television lenses and frames, refrigerator parts, displays and toys, etc.

Laboratory tests by a leading molding powder manufacturer show conclusively that polystyrene objects treated with D-Stat B remain static free even after repeated wipings. D-Stat B is odorless, colorless and non-flammable, and is applied readily by dipping, spraying or brushing.

Samples may be obtained from Roxbury Chemical Works, Inc., 2072 Smith Street, Centredale 11, R. I.

# Self Locking Spline Nuts

## FOR COST-CUTTING PRE-ASSEMBLY METHODS



Yale & Towne  
M4DP "Work saver"  
Electric Pallet Truck

### —The Red Elastic Collar protects inaccessible bolted fastenings from failures due to VIBRATION!

After testing many types of fastenings Yale & Towne selected ESNA spline nuts as the solution for the blind mountings on the front and rear assemblies of the M4DP "Work-saver" Electric Pallet Truck featured in this ad. Loose bolts at these inaccessible locations meant loss of adjustment and mechanical wear. Their research proved that self-locking connections at these application points provided protection against unnecessary down time . . . added assurance against service calls and repairs.

This is a typical example of the growing industrial acceptance gained by ESNA spline nuts . . . especially designed for easy driving into soft gray iron, magnesium or aluminum castings. By means of this simple installation the casting is given a threaded member; a tough drilling operation is speeded up because the drill is allowed to run through

the casting . . . costly tapping operations are eliminated. The self-locking collar does away with expensive cap screw lock wiring and fully protects inaccessible or blind mountings from operating failures.

In addition, if dis-assembly is required, ESNA spline nuts remain securely positioned for quick reinstallation and the famous Red Elastic Collar provides adequate locking torque for repeated re-use.

This is only one of many types of standard Elastic Stop Nuts available for special industrial fastening problems.

**HERE'S A CHALLENGE:** Send us complete details of your toughest bolted trouble spot. We'll supply test nuts—FREE, in experimental quantities. Write: Elastic Stop Nut Corporation of America, Union, N. J. Representatives and Agents are located in many principal cities.



THE FAMOUS RED ELASTIC COLLAR IS VISIBLE EVIDENCE OF LOCKING SECURITY

Threadless and permanently elastic, it provides these 4 outstanding features:

1. Protects against nuts loosening due to VIBRATION
2. Keeps locking threads CORROSION FREE
3. Provides for accurate BOLT LOADING
4. Seals against LIQUID LEAKAGE along the bolt threads

## ELASTIC STOP NUTS





# PERSONALITIES *in the* NEWS

Harry J. Deibel has been elected Vice President in Charge of Purchases of the Pressed Steel Car Company, Inc., Chicago, Ill.



Harry J. Deibel

Mr. Deibel began working for Pressed Steel Car as a messenger in the purchasing department at the company's McKee's Rocks plant in 1903. After several promotions he was transferred in 1911 to the main purchasing department, where he has served since. In 1921 he was appointed Assistant Purchasing Agent, and in 1943 he was named Purchasing Agent. He was appointed General Purchasing Agent of all the company's plants in 1945 and Director of Purchases in 1947. He studied mechanical engineering at Carnegie Institute of Technology. News of additional elections in the company's administrative, production, construction and sales departments will be found elsewhere in this issue.

K. G. Peterson has been named Purchasing Agent for Dearborn Stove Co., Chicago, Ill.

Erwin F. Math has been appointed Director of Purchases of Iowa-Illinois Gas & Electric Co., Davenport, Iowa. He was formerly Assistant Purchasing Agent for J. I. Case Company. Mr. Math succeeds Frank H. Hughes, who has taken a similar position with American Natural Gas Service Corp., Detroit, Mich.

Carl R. Roberts has been named Purchasing Manager of the Great Western Sugar Company, Denver, Colo. He succeeds A. D. Cottingham, who has retired after 41 years' service. A. S. Frost, Jr., has been appointed Assistant Purchasing Manager, succeeding Mr. Roberts.

Vincent P. Gregg has been appointed Purchasing Agent in charge of the copper, brass mill and screw machine products division of the General Electric Company's purchasing department, according to an announcement by Harry L. Erlicher, Vice-President in Charge of Purchasing and Traffic.

Donald L. Harwood has been appointed Purchasing Agent of Fairbanks, Morse & Co., Chicago, Ill., according to an announcement by Frederick J. Heaslip, Vice President in Charge of Purchases and Traffic.



Donald L. Harwood

Mr. Harwood began his career by joining the company's Three Rivers, Mich. plant in 1926. He was transferred in 1931 to the Beloit, Wis. works where he served in the purchased stores and production departments. In 1935 he was moved to the purchasing department of the Chicago headquarters office as materials expeditor. Later he was made Assistant Purchasing Agent, which position he held until his recent appointment.

H. Dale Thieben has been named Director of Purchases of the Rinshed-Mason Company, Detroit, Mich. Mr.



H. Dale Thieben

Thieben joined R-H seventeen years ago as an analytical chemist and had most recently been supervisor of the company's synthetic resin plant.

Herbert D. Dusenberre has been named Assistant Purchasing Agent in charge of stores for The Manufacturers Light and Heat Co. and associated Pittsburgh Group gas companies in the Columbia Gas System, with headquarters in Pittsburgh, Pa.

Mr. Dusenberre has moved to Pittsburgh from Binghamton, N. Y. where for the last 15 years he was in charge of purchases and stores for Binghamton Gas Works, The Keystone Gas Co., Inc., and Home Gas Co. These companies operate in New York state and are members of the Pittsburgh Group.

Harold L. Craven has been appointed Purchasing Agent of the Ball Brothers Manufacturing Company, Muncie, Ind. He succeeds Claude M. Kinzie, retired, who had held the post for past 41 years. Before his present appointment, Mr. Craven was Assistant Purchasing Agent for the company, and had served 31 years in the purchasing department. He is a graduate of Hillsdale College.

(Please turn to page 200)

How you  
benefit  
from...

**JOB  
PROVED**



## LUBRICANTS, CUTTING OILS AND PROCESS AIDS

In your plant, large investments in machinery ride on a thin film of oil. Failure of this film means catastrophe. Perhaps, too, thousands of man hours can be wasted by an inadequate cutting oil. Or the best of raw materials can become inferior end-products because of a poor process aid. You are assured against such losses when you use Sun "Job Proved" Petroleum Products. Here's why . . .

After a Sun product is developed and tested in the laboratory, it must pass rigid trials in the field before it is put on the market. For Sun knows that laboratory findings can indicate nothing more than probable performance—despite the fact that Sun's research and development facilities are

among the world's finest. Analysis in the field is exhaustive and scientific. In identical equipment, under identical conditions, in regular plant operations, carefully supervised comparison tests are made with the new Sun product and the product regularly used. When these tests prove the new product's worth, then—and only then—is it given the "Job Proved" stamp of approval and offered for sale.

A Sun representative will be glad to show you case histories on the performance of "Job Proved" products *in plants like yours*. Just call or write the nearest Sun Office.

**SUN OIL COMPANY • Philadelphia 3, Pa.**  
In Canada: Sun Oil Company, Ltd., Toronto and Montreal

**SUN PETROLEUM PRODUCTS**

**"JOB PROVED" IN EVERY INDUSTRY**



# Threadwell Tools do many jobs



## they can do your tough ones

For the answer you've been looking for, call in your nearest Threadwell Distributor. You can get his name as well as complete information by mailing the coupon below.

**THREADWELL TAP & DIE CO., Greenfield, Mass.**

Send me free Bulletins checked below

Name

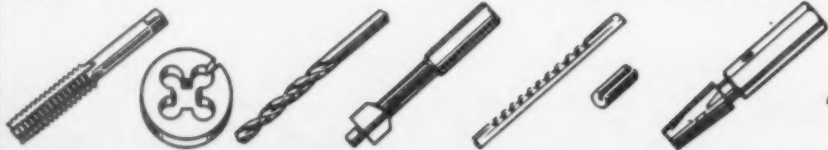
Position

Company

Street address

City  Zone  State

Taps ☐ Dies ☐ Drills ☐ Counterbores ☐ Keyway Broaches ☐ Gages ☐



LeRoy W. Grant has been advanced to the position of Purchasing Agent of The F. W. Wakefield Brass Company, Vermilion, O.

William R. Loughran has been named General Purchasing Agent of Ford International, New York, N. Y.

John B. Patzold has been appointed Purchasing Agent of The American Laundry Machinery Co., Cincinnati 12, O., to succeed the late J. W. Kinney. Mr. Patzold had been Assistant Purchasing Agent of the company for a number of years.

James L. Knight has been named Business Manager at Armour Research Foundation of Illinois Institute of Technology, Chicago, Ill.

Bob Fredrick has been named Purchasing Agent and Production Manager of Stewart Coach Industries, Inc., Bristol, Ind.

Gilbert O. Wright has been appointed State Purchasing Agent of Idaho, with headquarters at Boise, succeeding Harold A. Boyd.

L. E. Sauvoin has been named Purchasing Agent for Iowa State College, Ames, Iowa, to succeed Harlan Kirk. Mr. Kirk has resigned to become business manager of Lawrence College, Appleton, Wis.

Eustance Pantell, formerly in the purchasing offices of the City and County of San Francisco, has been named Purchasing Agent of Merced County, Merced, Calif.

Barney L. Lightwine has been named Purchasing Agent of the City of Tulsa, Okla.

Allen G. Chamberlain has been named City Purchasing Agent of Pueblo, Colo.

### AMONG THE COMPANIES YOU BUY FROM

**Dallas, Tex.**—The Taft-Peirce Manufacturing Company. Tool Supply and Engineering Company has been named representative in the Dallas, Fort Worth, and northern Texas areas for all Taft-Peirce products, with the exception of machine tools.

**Dallas, Tex.**—Udylite Corporation. Robert H. Heppel has been appointed to head the operation here of Davies Supply and Manufacturing Co., exclusive distributors in the Southwest for Udylite.

**Kansas City, Mo.**—Synthane Corporation. Gene Rankin has been named sales representative here to succeed the late Ernest Renard. He will direct sales in Nebraska, Kansas, Colorado, western Missouri and southwestern Iowa.

(Please turn to page 204)



# L.C.L.

## FREIGHT MERCHANDISE SERVICE

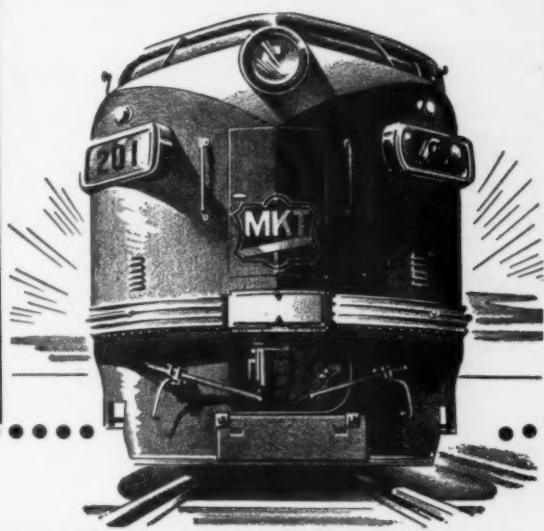
*fast and dependable*

**via KATY KOMET**  
**and other Katy Fast Freights**

to and from

**MISSOURI, KANSAS,  
OKLAHOMA and TEXAS**

*speeds shipments  
whatever their size*



## COORDINATED RAIL-TRUCK SERVICE

Just phone your nearest Katy representative and tell him *what* you have to ship and *where* it's going.

From then on, Katy's safe, modern, ON-TIME L. C. L. service takes over until shipment is delivered to your customers' door.

**Free pick-up and delivery  
from and to shippers' door**

All cars are worked at our freight houses day of arrival.



NATURAL ROUTE SOUTHWEST

Contact your  
Katy representative  
for details

# 2 to 3 times longer

## with these new Fatigue-Resistant



An exclusive development of  
**AMERICAN STEEL & WIRE COMPANY**

REPLACE YOUR OLD BOOM SUPPORTS with these new Tiger Brand FATIGUE-RESISTANT Boom Support Assemblies. Field tests and laboratory vibration tests indicate at least two or three times the usual length of life under the most severe vibration conditions.



NEW TIGER BRAND FATIGUE-RESISTANT BOOM SUPPORT ASSEMBLIES on a  
5 cu. yd. dragline near Pittsburgh, Pa.

# life for boom supports

## Tiger Brand Cable Assemblies

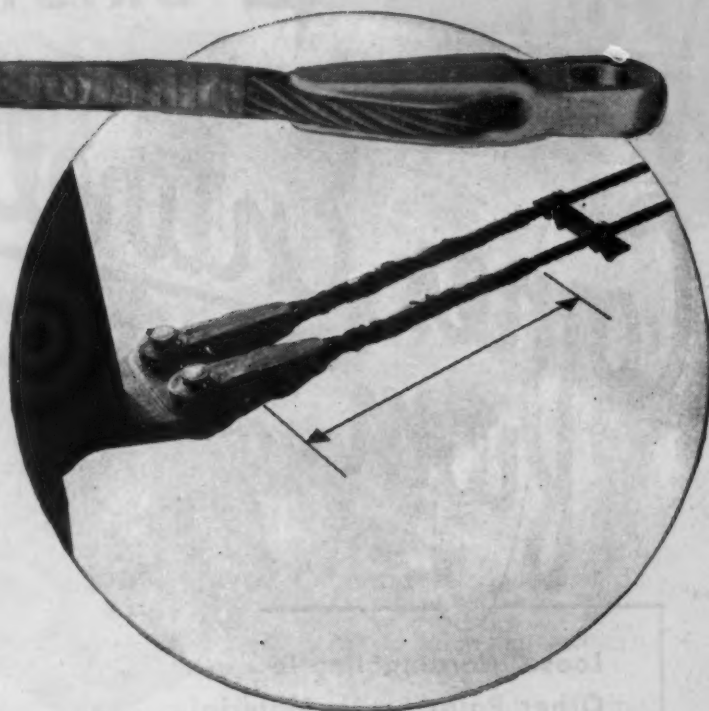
● Here is an "innovation" in boom support assemblies that effectively combats the most severe vibration on power shovels, draglines and cranes. Notice the novel thimble design which embodies an interwoven eye and open end pendant easily and quickly interchangeable on standard equipment.

This new design dampens vibration instead of concentrating it at one point. The result is two to three times longer life for boom supports and much greater safety.

The new boom supports are especially adaptable to installations where fatigue failures occur adjacent to sockets. They can be easily and quickly adapted to your present equipment because essential dimensions such as pin diameters, distances between ears, etc., are the same as for standard open and closed sockets.

Fatigue-Resistant Boom Supports are an exclusive development of American Steel & Wire Company. Send the coupon for complete information.

AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO  
COLUMBIA STEEL COMPANY, SAN FRANCISCO  
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM,  
SOUTHERN DISTRIBUTORS  
UNITED STATES STEEL EXPORT COMPANY, NEW YORK



VIBRATION EFFECTIVELY DAMPENED HERE over a long section instead of being concentrated at one point.

American Steel & Wire Company  
Rockefeller Building, Dept. G-70  
Cleveland 13, Ohio

Please send me complete information on your new Tiger Brand Boom Support Assemblies.

Name.....

Title.....

Company.....

Address.....

City.....State.....

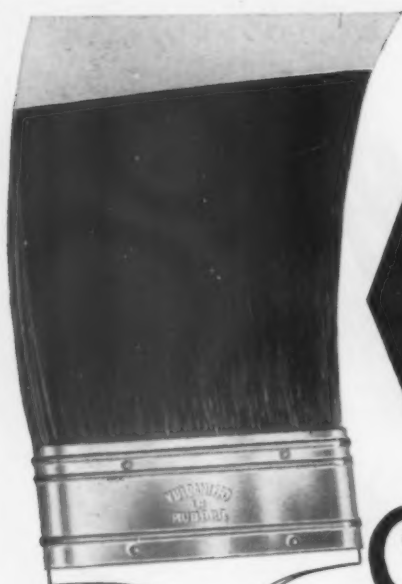


### AMERICAN TIGER BRAND WIRE ROPE

*Excellay Preformed*

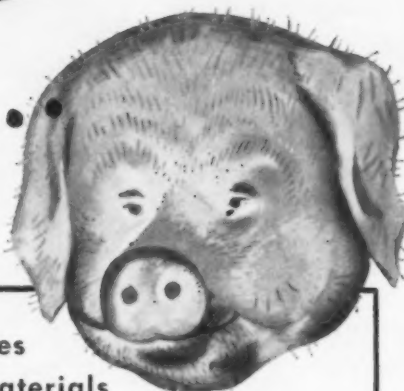
UNITED STATES STEEL





Fuller's  
"ALL PURE  
BRISTLE"

Comes Entirely  
from...



**Loose Wording Implies  
Other Paint Brush Materials**

**are Also Bristle.** It is common practice to refer to all brush material as "bristle". In some quarters, capital has been made of this misuse of the word. For the record, horse hair is *not* bristle. Fiber is *not* bristle. Our bristle comes only from Chinese hogs.

**FULLER 100% BRISTLE PAINT BRUSHES** with their "flag ends" that spread paint evenly without brush marks...their "pockets" formed by overlapping bristles...and the natural resiliency that only bristle has...come from just one place — the hide of a pig. To be sure of a paint brush with the desired long wear and even-spreading qualities, look for the Fuller seal and the words "All Pure Bristle".



Send for booklet on how to reduce brush costs. Simply write to...

INDUSTRIAL DIVISION **THE FULLER BRUSH CO.**

3554 MAIN ST., HARTFORD 2, CONN. In Canada: Fuller Brush Co., Ltd., Hamilton, Ontario

**Seattle, Wash.**—The Black & Decker Mfg. Co. Walter H. Bramman has joined the sales force here, and will work in the eastern part of Washington, all of Montana, and all of Idaho east of Boise.

**Davenport, Iowa**—Nichols Wire & Aluminum Company. E. C. Manix, formerly sales manager of the eastern division, has been named general sales manager of the company.

**New Orleans, La.**—Chase Bag Company. John A. Sutherlin has been appointed sales manager of the company's branch here.

**Chicago, Ill.**—Joseph T. Ryerson & Son, Inc. Thomas Z. Hayward has been appointed general manager of sales for



Thomas Z. Hayward

the group of thirteen Ryerson steel service plants. He was formerly assistant general manager of sales and acting sales manager of the Chicago plant.

**Chicago, Ill.**—Joseph T. Ryerson & Son, Inc., Roland W. Burt has been appointed sales manager of the company's plant here to succeed Thomas Z. Hayward.

**Syracuse, N. Y.**—Crucible Steel Company of America. George T. Fraser has been named assistant manager of tool steel sales.

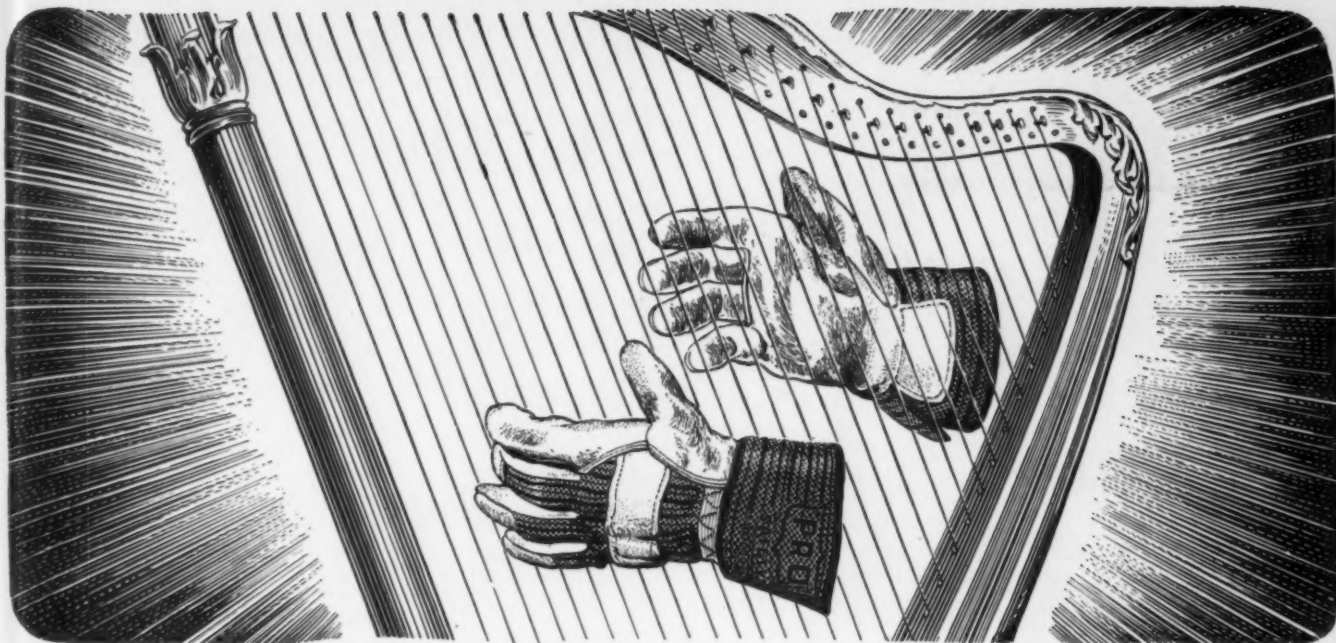
**Newark, N. J.**—Pyrene Manufacturing Company. Gordon K. Cross has been named sales representative in the northern New Jersey area.

**New Britain, Conn.**—New Britain Machine Company. Al LeBrun has been made Connecticut sales engineering representative of the company's Lucas Division.

**Kansas City, Mo.**—Chase Bag Company. J. P. Widlar has been named sales manager of the company's Kansas City branch territory. He was formerly manager of the company's Denver sales office. That office will continue under his supervision.

**Charlotte, N. C.**—Columbia Chemical Division, Pittsburgh Plate Glass Company. Thomas C. Hardwick has been appointed sales representative.

(Please turn to page 206)



## We hate to keep harping on quality

...But quality is the real gauge of value. It's the element that makes Riegel Gloves a better buy...dollar for dollar...and when we say "Quality" we mean working comfort, constant uniformity and rugged resistance to wear.

Only Riegel Gloves are made from raw cotton to finished glove ...in the same plant...by the same company. We know how our fabrics will wear, for we make them ourselves and test them constantly while they are being made.

Write for our new catalog. Riegel's 1950 Glove line is bigger, better and chock-full of styles to fit your needs.

**RIEDEL TEXTILE CORP., 342 Madison Ave., New York 17, N. Y.**



### DOUBLE-PALM GLOVES

Heavy-duty gloves with thick double-ply palms ... golden brown nap-out flannel palm, thumb and index finger for hard wear ... striped back. Popular with farmers, millworkers and oilmen. Knit wrist, safety cuff or gauntlet cuff.



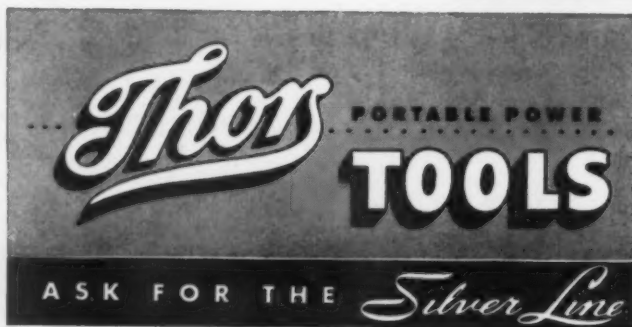
### REVERSIBLE GLOVES

Made to fit either hand. Switch when worn and get twice the wear. Knit wrist, band top or gauntlet cuff, white cotton flannel, in all popular weights. Sizes for men and for women and boys.

# Riegel WORK GLOVES



From midget type  $\frac{1}{4}$ " models to heavy production  $1\frac{1}{4}$ " machines, there's always the one best drill for the job—a THOR . . . all handle styles, all popular speeds—every tool packing Thor's extra power . . . featuring the light weight and handling ease of Thor's modern design . . . available with stands and accessories. Call your Thor distributor for a free demonstration—or write for Catalog E-2. Independent Pneumatic Tool Co., Aurora, Ill.



Belt Sanders

Bench Grinders

Drills

Drill Stands

Fender Hammers

Grinders

Electric Hammers

Impact Wrenches

Nibbler

Nut Setters

Polishers

Sanders

Saws

Screw Drivers

Tappers

Valve Refacers

Valve Reseaters

Air Tool Kits

**Philadelphia, Pa.**—The American Pulley Company. Gerard P. Weishar has been appointed eastern regional manager. He will have direct charge of district managers and representatives in the New England, Rochester, New York, Philadelphia, Charlotte and Atlanta territories.

**Newark, N. J.**—Peterson Steels, Inc. Edward R. Bergin has been appointed sales engineer in the New England district.

**West Hartford, Conn.**—Sier-Bath Gear & Pump Co., Inc. G. W. Bush Co., 601 Park Ave., has been appointed exclusive New England distributor.

**Los Angeles, Calif.**—Utica Drop Forge & Tool Corporation. Dillon Stevens & Company, 144 North Larchmont Blvd., has been named Pacific Coast representative.

**Boston, Mass.**—Lukens Steel Company. Edmund Pfeifer, formerly assistant district manager of sales here, has succeeded Herbert G. Austin, retired, as district manager of sales.

**Detroit, Mich.**—Pennsylvania Salt Manufacturing Company. A new office has been opened here at 535 Griswold St., with Harry G. Potts, district sales manager, in charge.

## INDUSTRIAL DEVELOPMENTS

**Bakelite Division, Union Carbide and Carbon Corporation, New York, N. Y.**, has announced plans for a new polyethylene resins plant at South Charleston, W. Va. The new facilities, expected to be in full operation by the third quarter of 1951, will almost double the present production rate of Bakelite polyethylene.

**Pittsburgh Plate Glass Company, Pittsburgh, Pa.**, will spend nearly \$2,000,000 on buildings and equipment in expanding its window glass producing facilities at Mt. Vernon, O. Productive capacity of the plant will be increased 50%.

**Alvey Conveyor Manufacturing Company** has moved to a new plant at 9301 Olive Street Road, St. Louis, Mo.

**Bay State Abrasive Products Company, Westboro, Mass.**, plans to start work immediately on an expansion program covering both buildings and equipment. It will represent an investment of \$250,000. A similar amount was invested in 1949.

**The Paramount Compressor Corporation, Chicago, Ill.**, is a new company organized to take over the manufacture of an improved all-purpose, portable air compressor formerly made by the Compressor Corporation of America, St. Joseph, Mich.

(Please turn to page 208)



your **SPANG CW** distributor  
*Believes in Quality*



Your Spang CW Distributor places a high value on customer goodwill. And he does a lot of things to maintain it. For instance, he stocks quality products. That's why he handles Spang CW Pipe. He knows that he can recommend it with full confidence . . . that it will deliver long, economical life in an infinite variety of applications. Furthermore, he knows that Spang CW Pipe has the kind of quality that makes it easy to weld, bend, cut and thread.

And your Spang CW Distributor likes to provide quality service . . . the kind that you can depend on all the time . . . anytime . . . in any emergency.

Next time you need pipe, fittings, fixtures, valves or other piping materials, call your Spang CW Distributor first. We think that you'll see what we mean.

## **SPANG-CHALFANT**

Division of The National Supply Company

**GENERAL SALES OFFICES: PITTSBURGH, PA.**

District Sales Offices: Atlanta; Boston; Chicago; Detroit; Houston; Los Angeles; New York; Philadelphia; Pittsburgh; St. Louis; San Francisco

**SPANG  
CW**

**QUALITY**

*that is  
recognized  
wherever pipe  
is used*



## SET SCREWS

Already Requested by 2000 Companies

**TRIPLE LOCKING ACTION**

**1 INTER-FERENCE FIT!**

**2 TENSION**

**3 REGULAR SET SCREW LOCKING ACTION**

*Get your Free Data sheet on*

### NEW ZIP-GRIP® Self-Locking SET SCREWS and ADJUSTING SCREWS

Solve vibration problems and other difficult applications, with special job-proven ZIP-GRIP® Self-Locking Set Screws.

**LOCK INSTANTLY, ANYWHERE**  
 ZIP-GRIPS® Speed Assembly—no time-wasting lock nuts, wires, deformed or riveted threads; Improve Product—end "creeping" and damaging effect; add new sales appeal; Save Money—End extra tapping, cut servicing, maintenance.

**WRITE TODAY**  
 Ask for FREE ZIP-GRIP® Data Sheet; also send description of your problem and we will furnish Engineering Test, Self-Locking ZIP-GRIPS®. Designed to meet your particular requirements.

\* PAT. PEND.

ask for complete catalog of



**Set Screw & Mfg. Co.**

SET SCREWS 142 Main St., Bartlett, Ill.

We Specialize in Solving Puzzling Set Screw Problems

more than

# 80

Oakite  
Materials  
to solve  
your cleaning  
problems

## SERVICE is a four-letter word

OTSR may not be in the dictionary—but to thousands of wise purchasing agents it means Oakite Technical Service Representative—and that means service unlimited!

Why? Because service is the Oakite man's full-time job. He comes into your plant whenever you need him—at any hour—to study your cleaning problem and recommend job-tested materials and methods. He works with you . . . keeps checking back to make sure the material is doing the job—better, faster. He's as anxious to cut corners and costs for you as he is to sell Oakite.

And his services are free. Call him today. Or write Oakite Products, Inc., 56 Thames St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING

# OAKITE

MATERIALS • METHODS • SERVICE

*Technical Service Representatives Located in  
Principal Cities of United States and Canada*

Arabol Manufacturing Company, New York, N. Y., adhesives manufacturer, has opened a new factory in Atlanta, Ga.

Fairbanks, Morse & Co., Chicago, Ill., has arranged the purchase of 40 acres of land in the greater Kansas City, Mo., area, and plans to construct a \$5,000,000 scale plant there in the near future.

Townsend Company, New Brighton, Pa., fasteners manufacturer, has completed an expansion program which has doubled the capacity and increased the variety of items produced in its Chicago, Ill. plant.

John Waldron Corporation, New Brunswick, N. J., has acquired the business of Meadows Machine Works, South Kearney, N. J. Both concerns manufacture machines used in the converting of paper, textiles and plastics.

A. O. Smith Corporation will expand its electric motor manufacturing facilities at Tipp City, O., where the company recently bought Whirl-A-Way Motors, Inc. A new 60,000 sq. ft. factory is to be built this summer.

The Watertown Manufacturing Company, Watertown, Conn., a pioneer in the plastics industry, has acquired the physical assets of the Moulded Metals Company, Inc., also of Watertown, well-known powdered metallurgy firm.



## The Finest Address in Maryland

Faultless service, 700 inviting, clean rooms, superb Chesapeake Bay sea food, a welcome that lasts . . . and genuine, old-fashioned hospitality . . . all contribute to making the largest hotel in Baltimore the finest address in Maryland.

THE  
*Lord Baltimore Hotel*  
BALTIMORE 3, MARYLAND

## ALCOA TAKES OVER AMERICAN MAGNESIUM CORP. ACTIVITIES

Manufacturing activities of American Magnesium Corporation, the magnesium fabricating subsidiary of Aluminum Company of America (ALCOA), were assumed by ALCOA, effective June 1, 1950, and American Magnesium Corporation became inactive on that date, it was announced by Wiser Brown, A.M.C. vice president.

Operations of American Magnesium Corporation have been conducted at Cleveland, Ohio, and Buffalo, N. Y., and will be continued there under ALCOA management. Additional magnesium fabricating activities are conducted by ALCOA at several other locations, and these operations will continue as they are.

Inasmuch as ALCOA's sales department has been the sales agent for American Magnesium Corporation, there will be no change in selling activities except that, as of June 1, 1950, ALCOA directly invoices all shipments of magnesium products.

## B&W TUBE COMPANY BROADEN FABRICATING WORK

Plans to enter the field of limited fabrication of seamless and welded tubing, in addition to its primary work of manufacturing such tubing, have been announced by The Babcock & Wilcox Tube Company, Beaver Falls, Pa.

E. A. Livingstone, vice president of the company, explained that "upon special request we have in the past done certain fabrication work for customers on a job basis but growing demands to have basic fabrication of tubes done by the manufacturer instead of necessitating shipment to another plant has prompted us to form a department for this type of work."

The types of fabrication to be handled under the new policy, Livingstone said, will include bending; end forming such as swaging, upsetting, flaring and expanding; flash-butt-welding for safe-ending and making long length tubing; the production of tubing with various cross section shapes and other specialty tube work.

## FIRST UNITED STATES INTERNATIONAL TRADE FAIR IN CHICAGO

The First United States International Trade Fair will be held in Chicago August 7 through 20, with industrial and related equipment being concentrated in the International Amphitheatre, chemicals, raw materials and metals in the Coliseum, and civilian goods in Navy Pier. Firms from the United States will occupy one-third of the industrial and related equipment space, which is six times more than any other one nation. Metal-working equipment, including lathes, grinders and cutters, engines, including diesel, gas and electric, as well as miscellaneous items

(Please turn to page 210)



## for packages customers like!

Your packages . . . sealed with Blue Ribbon Superstandard Gummed Tape . . . reach their destinations tightly sealed, still neat, and reflecting the care which you have put into the shipment. The weld-like adhesion and strong long-fiber kraft of *Supple-ized\** Blue Ribbon tape materially add to the strength of your containers. Dust, dirt and moisture are tightly sealed out, despite weather changes and rough handling.

### printed tape for additional protection

If you want the ultimate in protection and recognition, use Blue Ribbon Printed Tape . . . either natural kraft or colored. It costs but little more than plain tape. It advertises and guards your merchandise wherever it goes . . . helps your customers and carriers identify your packages, makes shipments tamper-proof, and slashes damage and loss claims to the minimum.

Use Blue Ribbon tape and watch your customers smile.

\*Copyrighted. Supple-izing is an exclusive Hudson process for the treatment of the adhesive and paper to make Blue Ribbon tape more flexible . . . easier and faster to handle . . .



# Blue Ribbon

## SUPERSTANDARD GUMMED TAPE

. . . available in a choice of weights, widths, lengths, colors, plain or printed.



HUDSON PULP & PAPER CORP., Dept. C-11  
505 Park Ave., New York 22, N. Y.

*Send Today* for illustrated, free booklet "How to speed up the sealing of packages in your shipping room."

Name

Company

Address

City  Zone  State



# Eyes RIGHT for your RIGHT Pyrenes!

Buy them the reliable, prompt, economical,  
easy way—from your local Pyrene jobber

There's one best extinguisher to guard any fire hazard. Call on your local Pyrene\* jobber for the right Pyrenes for your hazards. Pyrene makes extinguishers for every fire hazard; jobbers carry various types in stock. That means you get immediate delivery, pay no freight charges from the factory. One invoice handles everything. And you deal with an established business right in your community.

New stainless steel extinguishers have been added to the seamless copper shell extinguishers in the Pyrene line. Now more than ever, it pays you to *standardize* on Pyrene—for precision workmanship, real dependability, greatest dollar value. Write for name of your local Pyrene jobber.

\*T.M. Reg. U.S. Pat. Off.



**PYRENE MANUFACTURING COMPANY**  
578 Belmont Avenue Newark 8, New Jersey

Affiliated with C-O-Two Fire Equipment Co.



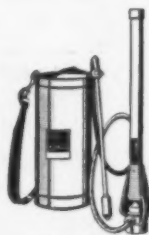
#### CARTRIDGE-OPERATED

New stainless steel shell—new low price. No annual recharging; no acid dangers. For fires in wood, paper, textiles. 2½ gal. size.



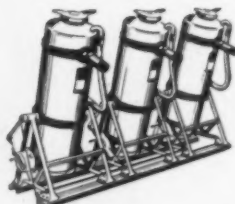
#### VAPORIZING LIQUID

The all-purpose extinguisher effective on almost every kind of fire. Safe on electrical fires, too. 1 qt. and 1½ qt. pump types; 2 qt. and 1 gal. pressure-operated types.



#### AIR FOAM

Couple playpipe to hose line. Every 19 gals. of water and 1 gal. of PYRENE Foam Compound yield 350 gals. of foam! For flammable liquids and ordinary combustibles.



#### MANUAL AND AUTOMATIC SYSTEMS

Complete fire-fighting systems, using chemical foam or air foam. For storage tanks, dip tanks, loading racks, etc.

ALSO CHEMICAL FOAM,  
SODA-ACID, PUMP TANK AND  
OTHER EXTINGUISHERS

(Continued from page 209)

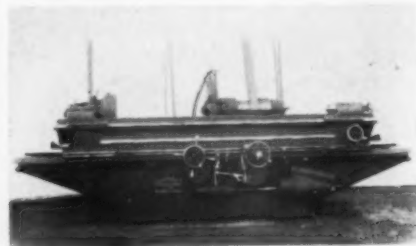
including trolleys, control equipment, benches and pumps will be included among exhibits. Foreign exhibits are expected from firms in Denmark, England, Holland, Switzerland, Norway, Sweden, Italy, Yugoslavia, Austria, Belgium, France, Germany, Japan, and other nations.

Buyers' registration fee has been established at \$5,000, which includes the First United States International Trade Fair catalog, reservation and hotel accommodation service, badge, credentials and entry to all buildings of the Trade Fair as many times as desired.

1 1 1

#### NORTON GRINDING MACHINE DIVISION MARKS FIFTIETH ANNIVERSARY

This year marks the fiftieth anniversary of the Norton Company's Grinding Machine Division. The grinding machine division was named "Norton Grinding Company", an independent enterprise of the then Norton Emery Wheel Company. It was established to manufacture the first production-precision cylindrical grinding machines in the United States. The first machine was sold to R. H. Hoe & Co. of New York for grinding printing press rolls. After 27 years of service it was repurchased by the Norton Company and presented to the Edison Institute of Technology at Dearborn, Mich., where it is on exhibit.



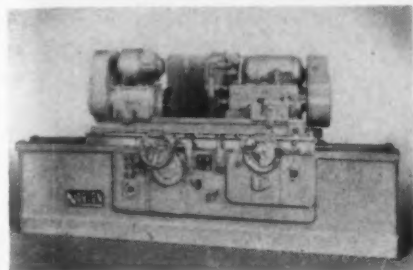
First Norton production cylindrical grinding machine, designed by Chas. H. Norton and built in 1900 for grinding printing press rolls.

In 1906 the emery wheel company's name was changed to Norton Company, when manufactured abrasives replaced natural emery and corundum in the manufacture of grinding wheels. In 1919 the grinding company was merged with the Norton Company becoming the Grinding Machine Division as it is now known.

The founders of the company envisioned the mutual benefits to be derived from making the machines that used the parent company's wheels, and the Norton Company was the first concern in the field to make them both. The most important factor in the decision to manufacture grinding machinery was Charles H. Norton. He was a machine designer with Brown & Sharpe of Providence, R. I., who came to the old Norton Emery Wheel Co. with plans for the first production cylindrical grinding machine. His plans went a step further with the use of the grinding wheel as a polishing tool.

He conceived the idea that grinding could remove greater amounts of stock and in many instances supplement the lathe as an actual production tool.

As a result, he and his associates were responsible for many developments pioneered by the Norton Grinding Co., including crankshaft and camshaft grinders,



Type CTU 10" cylindrical grinder, modern counterpart of the first Norton cylindrical grinding machine.

roll grinders, flat surface grinding machines, fully automatic cylindrical grinding machines, and machines for lapping—to mention a few. In all, over 41,000 grinding machines have been turned out by the company since 1900.

Charles H. Norton was awarded the John Scott medal in 1925 for his many accomplishments in the field of grinding, perhaps best demonstrated by the more than 100 patents held in his own name. He retired in 1925 and died at the age of 91 at his Plainville, Conn. home in 1942.

1 1 1

## EASTERN RAILROADS REDUCE STEEL RATES SUBJECT TO 80,000 POUNDS MINIMUM

As a result of increased competition by trucks and inland waterways in recent years, railroads are hauling only about 70 per cent of total steel products, said H. D. Rhodehouse, general traffic manager of Republic Steel Corporation, Cleveland, in an address on Problems of Truck and Barge Shipments at the General Meeting of American Iron and Steel Institute, in New York.

The rising trend of competition with the railroads may encounter retarding factors immediately ahead, the speaker continued, as Eastern railroads have reduced their rates on iron and steel articles, subject to minimum carload weight of 80,000 pounds. Roads in some other districts are studying truck competition and are expected soon to follow the example of Eastern lines. The railroads hope to regain much of the tonnage of iron and steel now moving by truck.

The trucking companies, of course, are giving further study to the problem. For the near future, it is expected, said Mr. Rhodehouse, there will be much confusion in determining the most economical method for transporting steel. However, he believes that in a short time, the rail-truck competitive situation will be clarified.

(Please turn to page 212)



## ASK US TO QUOTE ON Name Plates

Send us your designs and specifications. Or, if you wish, our Art Department is available to help in preparing distinctive name plates for your products. We will gladly quote on your requirements, without obligation. Etched or lithographed on metal, Ecoa name plates are *permanent marks of distinction* which reflect quality and add sales appeal to your product. They look better—longer.



### THIS BOOK CAN SAVE YOU MONEY

By choosing from nearly 5000 shapes and sizes for which we have dies on hand you can save the cost of special dies. Your design and engineering departments will get real money-saving ideas from this book. Write for your copy now on your letterhead.

### ETCHING COMPANY OF AMERICA

1520 Montana St., Chicago 14, Ill., Dept. C-7

Metal Name Plates, Dials and Panels, Etched or Lithographed • Etched Metal Scales, Clock Dials, Trophy Plates, Plaques, Art Novelties, Advertising Specialties • Etched Metal Panels for elevator and architectural uses • Lithographed or Screened Plastic Name Plates or Dials.



**"PEL-X is  
BEST by TEST!"**

"Recently, one of our customers sent us, *unsolicited*, the findings on a test he conducted. In this experiment, PEL-X was tested along with seven similar tracing cloths and when the results were in, PEL-X topped the list on every count including evenness of pencil lines and workability—and by a substantial margin, too!"

This is proof that PEL-X can do everything as well as any other tracing cloth and some things better.

Find out for yourself just how good PEL-X really is by trying it on your drawing board. Put it to any test against any competitive tracing cloth and compare the results. We're sure you'll want to switch to PEL-X. Write for generous sample. \*Name on request.



**THE HOLLISTON MILLS, INC.**  
NORWOOD, MASS.

NEW YORK

PHILADELPHIA

CHICAGO

★ PEL-X is backed by Holliston's 50 years of leadership and experience in developing special purpose cloths for industry.

## Here's Where HY-PRO taps paid 78 to 1



**for a Plastics Manufacturer**

**PART:** Molded Plastic Flat Iron Handle

**PROBLEMS:** Taps being used to thread blind holes in molded plastic flat iron handles had a maximum life of 500 threaded holes in addition to spoiling many pieces by reaming out holes.

*Then They Called in the HY-PRO Sales Engineer*

**HY-PRO SOLUTION:** Hy-Pro's Engineer came up with a tap of special design having their exclusive HARDER-NELL surface treatment. Results obtained in this highly abrasive plastic are fantastic—39,000 threaded holes per tap.



Let Hy-Pro solve your tapping problem too—call a Hy-Pro Sales Engineer today.

Order from your Distributor

**HY-PRO  
TAPS**

**HY-PRO TOOL CO.**

NEW BEDFORD, MASSACHUSETTS

A SUBSIDIARY OF CONTINENTAL SCREW COMPANY

## PRINTING PRESS FOR COLOR LITHOGRAPHING STEEL DRUMS

R. Hoe & Co., New York, has announced a new printing press for multi-color lithographing of heavy steel drums.

The first press of the new line has been installed in the Rheem Manufacturing Company's New Orleans plant. It prints, individually, any number of colors, without limit, on 50" x 72" sheets of 18-gauge steel which are formed into 55-gallon barrels, also known in the trade as 400-pound grease drums.

"Now it is possible," the Hoe company said, "to provide economically the same fine package in a heavy steel drum as in a small can with distinctive illustrations and clear, cleanly printed text in all sizes of type." Standard lithographic inks are used, with printing done from offset plates of the usual type.

Eighteen-gauge steel is about 1/20th of an inch thick and weighs approximately two pounds to the square foot. The new Hoe press can handle steel sheets from 24" x 42" up to the 50" x 72", with a gauge range from 24, which is slightly more than 1/50th of an inch thick and weighs about one pound per square foot, up to 16-gauge, which is approximately 1/16th of an inch in thickness and weighs around 2½ pounds a square foot.

In addition to the printing on the outside of the drum, the new press handles the head, or top of the container in the same way, and can roller-coat the inside surface with lacquer to protect its contents from any foreign matter. Specially formulated linings can be applied to meet requirements for products that are corrosive and hard to contain.

1 1 1

## WELDED ECONOMIZER RETURNS CUT REPAIR BILLS \$7500 A YEAR

A public utility company has cut repair bills \$7500 a year by modernizing the independent type of fuel economizers employed in its steam plant. In addition, increased efficiency, brought about by the full availability of the economizers, has led to substantial savings.

Formerly, directional changes in the tubing were made with conventional flanged connections that often leaked, sometimes entailed shutdowns, and ran up maintenance cost. The refabricated tubing uses welded fittings for directional changes. Leaks have been permanently banished, optimum flow conditions obtained, and the investment in materials and labor has been rapidly amortized by the reduction in plant overhead.

An illustrated case-history of this economizer modernization program has been prepared under the title "Welded Economizer Returns." It may be obtained free by writing to the author, Carl B. McLaughlin, Engineering Service Department, Tube Turns, Inc., Louisville, Ky. He points out that a large percentage of steam plants rated 1000 lbs. pr. hr. and over can make similar savings, if they employ the independent type of economizer.



## How California Selected A New State P.A.

(Continued from page 98)

- (1) cash required for stationery and other office equipment.
- (2) salaries allotted for personnel in executive positions.
- (3) expenditures for stenographic and typing services.
- (4) expenditures for communications of all types.
- (5) expenditures for advertising.

(Answer: 2).

### Supervision and Personnel Management:

If a worker is made directly responsible to two supervisors who have equal authority but are not closely in touch with each other, the most probable of the following alternatives is that he will

- (1) do very little work.
- (2) develop a high degree of versatility.
- (3) devote most of his time to one field of work and neglect the other.
- (4) often be confused and face situations involving conflicting demands on his time.
- (5) maintain a high level of interest because of the varied nature of his tasks. (Answer: 4).

Throughout the examination an attempt was made to adhere to the practical basis rather than the academic. The interest shown by the many applicants, and the practical (Please turn to page 214)

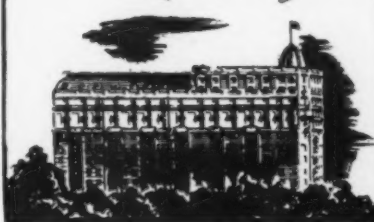


## Welcome to WASHINGTON, D.C.

Hotel Raleigh in the heart of official Washington is the headquarters for all tourists and business people. 400 immaculate air-conditioned rooms, excellent cuisine, and the famous Pall Mall Room. Write today for our booklet or HONEYMOON brochure. Or see your travel agent. **SPECIAL COURTESIES TO HONEYMOONERS**

C. C. SCHIFFELER VICE PRESIDENT  
AND MANAGING DIRECTOR

**HOTEL Raleigh**



**"A penny saved is two pence clear."**

—Ben Franklin's "Necessary Hints," 1736

In days when venture capital comes not forth, cutting costs in thy shop plows money back into thy business.

—Acme Steel's Notebook, 1950

**Mr. Plant Manager:** You know that new machines, new methods can help you cut costs on the production line.

But are you overlooking opportunities to save in your shipping room, in your packaging and materials handling operations?

Most companies can find plenty of new ways to more efficiency and greater thrift, when an Acme sales engineer suggests them. In 9 out of 10 cases, we can help you benefit with Acme Methods and Acme flat steel strapping, Acme stitching machines and wire, and other Acme steel products.

More than 50,000 Acme customers now enjoy these benefits. Why don't you? It won't take long to find out. Just pick up your phone and call the Acme Steel service office nearest you. (There are 46 of these offices in the principal cities of the U.S. and Canada.) Or send the coupon for detailed case studies of savings in your own particular field.

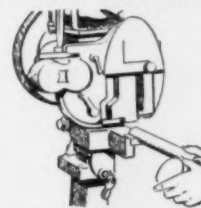
For offices and factories as well as homes, choose Venetian blinds made of ACME GALVA-BOND steel.



Take a tip from the women of America. In Venetian blinds, they choose steel for smarter style...steel for longer life...steel for easier cleaning. They choose blinds of Acme Galva-Bond Steel for lasting beauty. Isn't that a good lead to follow in your offices and plants? Look for the Acme Galva-Bond seal on the Venetian blinds you buy from your local dealer.



Stop at Riverdale, Illinois, next time you're in or near Chicago, and see our giant rolling mills. We start with a steel billet about the size of a 20-foot 2x4, heat it white-hot, roll it into a ribbon of steel  $\frac{1}{8}$  of a mile long.



**Cuts fastening operation costs**

Savings of 91 per cent in materials! Savings of 38 per cent in labor! Product quality improved! That's what happened when a spraygun manufacturer put an Acme-Morrison Metal Stitcher on his assembly line to fasten metal to wood.

### ATTACH THIS COUPON TO YOUR BUSINESS LETTERHEAD

ACME STEEL COMPANY, Dept. P-70, 2838 Archer Avenue, Chicago 8, Illinois

We manufacture \_\_\_\_\_ . Please send me booklets on Acme Methods checked.

☐ Please have sales engineer call.

☐ **Shipping (Carload and L.C.L.)**—"Acme Unit-Load"—The story of reduced damage claims and better handling for shippers.

☐ **Packaging, Shipping, Materials Handling**—"Savings in Shipping" tells how to save money and safeguard customer good will with Acme Steelstrap.

☐ **Bag and Box Assembly**—"Profit by Stitching" demonstrates cost-cutting Acme Silverstitchers and Acme-Champion Stitchers.

☐ **Product Assembly**—"Acme-Morrison Metal Stitchers"—for savings in fastening metal-to-metal or metal-to-other materials.

☐ **Book Assembly**—"Acme-Morrison Book Stitchers" for savings in the graphic arts field.

NAME \_\_\_\_\_ POSITION \_\_\_\_\_

COMPANY \_\_\_\_\_

STREET \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

# MAKE 7 TESTS

## BEFORE CHOOSING YOUR

# "CHEAPEST WAY TO SHIP"

"Rates are only one test of what is your cheapest way to ship. Before you pick your cheapest way, make sure the service at least passes these 7 tests—



Because my customers demand a service that always scores high on all these tests, they choose Railway Express as their cheapest way to ship."

—says B.W. Del Villano,  
Binghamton, N. Y.,  
8 years an Express Man

- 1 is the service dependable?
- 2 is it fast?
- 3 is pickup and delivery made in all cities and principal towns?
- 4 is there only one responsibility for a complete, coordinated service?
- 5 is only one all-inclusive charge made?
- 6 is a receipt provided at both ends?
- 7 is the valuation allowance liberal?

## ALWAYS ASK

## THE EXPRESS MAN!



### How California Selected A New State P.A.

(Continued from page 213)

understanding exhibited by the majority in answering the varied questions, attests the wisdom of this procedure.

#### Qualifications Appraisal

Twenty-five candidates were successful in the written examination and were called for interview by a Qualifications Appraisal Board consisting of the Executive Officer of the State Personnel Board, the Director of Finance, and two purchasing agents from private industry—M. C. Nystrom of Southern Pacific Company, San Francisco, and Rulon Nagely of North American Aviation, Inc., Inglewood, California. It was the duty of this Board to evaluate their personal traits and fitness. Included under personal qualifications were: ability to analyze situations accurately, to adopt an effective course of action, and to work cooperatively with others; demonstrated supervisory ability; integrity; initiative; resourcefulness; and good judgment.

After the interview an eligible list of seven remained, from which the Director of Finance was free to choose any one of the top three. It is interesting to note that the seven eligible men were all experienced purchasing agents of high standing.

#### The Man

Now a word about Larry Hobart, the man selected for this important post in our State Government. Mr. Hobart graduated in Civil Engineering at the University of California in 1910, and for several years was engaged in engineering work in California, Texas, and Michigan. In 1922, after a Civil Service examination, he settled down as a buyer of construction materials for the State of California in Sacramento. In 1925 he was promoted to the position he has just left—that of deputy in charge of the State Purchasing Office in San Francisco.

He now becomes the third person to hold the position of State Purchasing Agent since creation of the office in 1915. His predecessors were W. G. McMillan, who served from 1915 to the time of his death in 1929; and J. Fred Misphey, who held office from 1929 until his retirement on March 1, 1950.

Mr. Hobart has been a member of the Purchasing Agents' Association of Northern California for 25 years, having served as treasurer, vice president, and president. He

has also served as president of the California State, County, and Municipal Purchasing Agents' Association.

We in California are confident that the purchasing affairs of our State are in capable hands. The responsibility of the California State Personnel Board, in holding an examination for this position, was great; perhaps that is an understatement when considering that purchases for the last calendar year totaled approximately \$60,000,000. We know that their duty to the citizens of the State has been of prime importance to them, and that they have successfully conducted an examination which was exceptionally well devised to give them a fair and sound basis on which to evaluate the candidates for this position. In turn, James S. Dean, Director of Finance, has selected from the eligible list established by the Personnel Board a man with qualifications more than adequate to administer the affairs of the State's Purchasing Office.

We are pleased to say, "Well done," and we hope that this brief account of their procedure in selecting the right man may be of interest to others.

1 1 1

### Who Contacts Your Suppliers?

(Continued from page 73)

such contacting that is handled "through channels", the higher will be our over-all organizational battling average for efficiency.

In an organization of 3,600 people—more than 400 of them in supervisory and technical positions—the important thing is not whose prerogative it is to write letters, or who gets credit for what. Rather, the important thing is to maintain an atmosphere where every one can get ideas and have freedom to explore and back up their ideas—and to maintain services whereby they can actually receive assistance and service in developing their ideas.

If "going through channels" tends to delay and discourage and stifle initiative, the common-sense answer is to by-pass the channels. But if the channels are made helpful, the common-sense answer is to use them.

CLASSIFIED SECTION

SEE PAGE 227

## TROUBLE . . .

in  
the  
field



## call on Coto-Coil

Call on Coto-Coil if the coils you use have failed you, or if your requirements are very exacting.

For 32 years, COTO-COIL windings have served with distinction above and below ground . . . on the sea and undersea . . . in the air.

They are wound to your specifications but employ special techniques to meet extremes of heat and cold, moisture and vibration. Whatever your requirements, we can meet them. You will be pleased with price, quality, delivery and performance.

### BOBBINS

ACETATE INTERLEAVE (Coalesced)

PAPER INTERLEAVE

COTTON INTERWEAVE

TAPED FORM WOUND

UNIVERSAL SINGLE or

MULTI-PIE CROSS WOUND

**COTO-COIL CO., INC.**

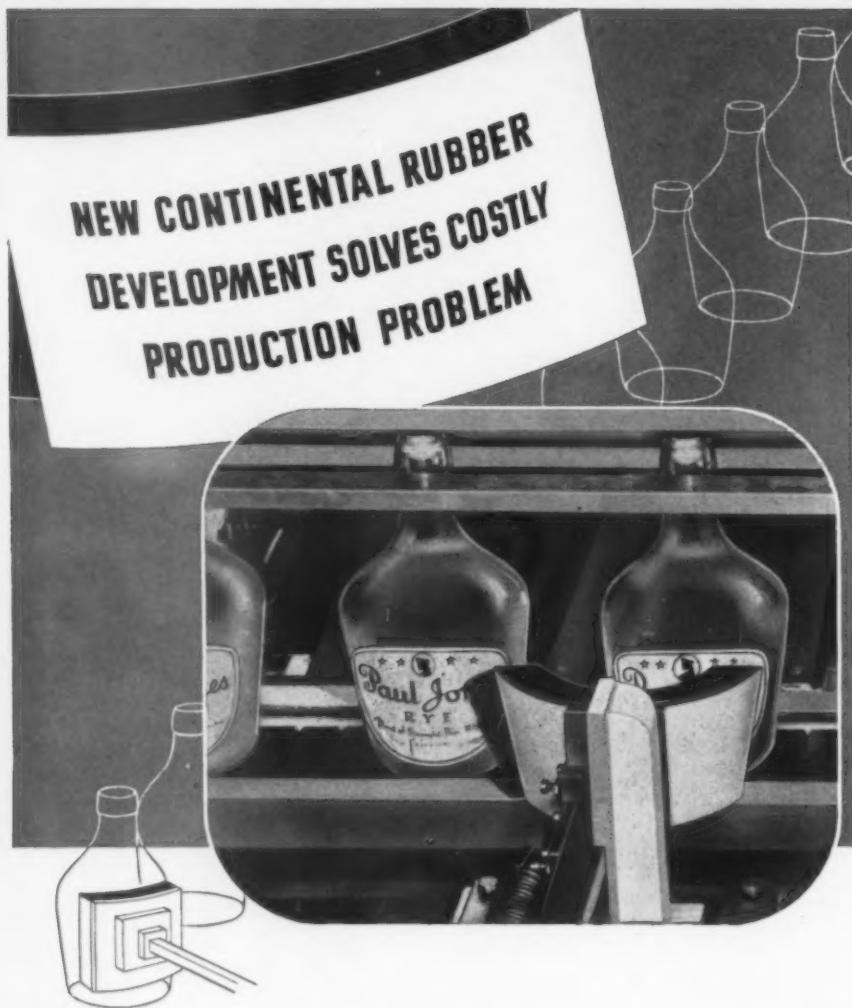
COIL SPECIALISTS SINCE 1917

65 PAVILION AVE.  
PROVIDENCE 5, R.I.





## NEW CONTINENTAL RUBBER DEVELOPMENT SOLVES COSTLY PRODUCTION PROBLEM



**HERE'S AN UNUSUAL RUBBER PRODUCT** in the labelling machine built by Pneumatic Scale Corporation. It's one-third softer than rubber compounds normally produced.

This exceptionally soft rubber is used in the pressure pads which apply labels to bottles as they move along a conveyor line.

Formerly, these pressure pads were made of "plied up" sheet and sponge rubber. This sponge rubber sandwich-type pad, while satisfactory, was costly and difficult to make. Pneumatic Scale engineers recognized the economies of solid rubber but had been unable to find a compound soft enough to do the job.

They consulted Continental and explained their problem. Continental ac-

cepted the challenge and finally came up with this new, extra-soft, solid rubber product, which—according to the customer—*meets every specification, saves considerable production time, and gives longer service.*

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# CONTINENTAL RUBBER WORKS

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## The Purchasing Function in Management Organization

(Continued from page 106)

has evolved into a departmentalized and coordinated staff service.

Undue centralization always tends to confer a measure of line authority upon the staff. The value of staff service presupposes a leader in the line organization who is competent to appraise such counsel. The psychics of line and staff relationship have been expressed as follows by General Summerall:

"The commander must know the art of staff support, and each member of the staff must know the art of command. Yet no commander can be replaced by any staff, however able the latter may be. The responsibility for decision and initiative must rest with him, and he must have the attributes, the character, and the knowledge to be worthy of the confidence and the service of the staff."

Where does the purchasing department belong in the line and staff organization? The importance of the purchasing function determines its exact location, with due consideration to the personalities involved. Your department can be accepted as the most vital service in the university if you will only learn that you are not operating in and for yourselves, but as representatives of the top administration. Your function is to serve. You should ever remember:

... that you are dealing with a highly trained professional group of people, specialists in their own respective fields.

... that some of the faculty members are visionaries, idealists, and highly impractical, yet—

... that other members of the faculty are immeasurably better trained in the technical aspects of the items they need, and that you are buying for them, than you are.

... not to make yourself look asinine by arbitrarily trying to change the specifications of a technical item called for by an authority. You might ask him whether a given substitute would meet his requirements. Such a request may be of help both to him and to your school, but do not buy something that does not answer his needs merely because of price or your desire for standardization.

... to make use of the specialists on your own faculty. Others pay high consulting fees to them, and you could have this service free.

The purchasing agent, too, is a specialist in commercial practice.

But to the extent that you clearly recognize that yours is a service function, you will strengthen your usefulness.

For any organization to be strong, it must have:

1. Strong, resourceful leadership.
2. Clearly defined responsibilities.
3. Carefully selected, trained, and placed employees.

4. Standardized methods.
5. Adequate cost and other records.
6. Cooperation.

The organization of the purchasing department should fit into each of these items, and should contribute to the success of other departments. Should you do this, you will act as a leaven to the entire institution you serve.

### Central Stores

(Continued from page 102)

immediately and the error, whether on the card or in the physical stock, can be corrected.

The *record control* of the stock is also an extremely important function and is completely divorced from the physical storage of the commodities. The Kardex visible record is commonly used. For most items, some method of maximum-minimum quantity control is set up. This works best for standard items with little price fluctuation and also works well with items which have relatively uniform rate of consumption. It is too mechanical for items which fluctuate considerably in price, which are expensive, or for which use is so heavy as to make the total expenditures large. This class of item, which is the important 10 or 15% of your stores operation, should be controlled by personal inspection as often as necessary by a responsible individual.

Stock record cards should show considerable information. They should certainly show the past suppliers and the source of each shipment, the order number, quantity ordered, total cost including freight or handling, and the unit price at which item should be charged out.

The standard unit should be shown. The recorder quantity (which may change from time to time because of changed conditions

internally or in the market) should be a part of the record. The cards should also make provision for showing the quantity on order, the quantity on hand, and the detail of the quantities issued which could be traced back to the departments receiving. The cards, by all means, should give an accurate description of the commodity in terms of the catalog and should show the catalog number of the item.

*Dangers* to be avoided in stores operations should be pointed out. The temptation is great at times to speculate on commodities by attempting to buy at the bottom of the market. It is bad to overbuy merely to gain an additional quantity discount or for speculative reasons. On the other hand we should not limit our purchases to such an extent that we are chronically out of stock of many items. It has been said that if you are in stock on all of the items all of the time you would be operating a bad store-room; on the other hand, if you are out of stock of more than 5% of the items during the year's operation, you also need to examine your procedure.

We should not attempt to handle commodities if we do not have the proper personnel and storage facilities. This is an obvious point, but one that is often overlooked.

(Please turn to page 218)



Can a fastener  
cost less  
than what  
you pay  
for it?

YES...if it's a  
good fastener!

An ordinary  
fastener, no matter  
how cheap, can cost  
many times as much as  
a good one in lost  
assembly time and rejects.  
A good fastener, uniform,  
reliable and right for  
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ENGINEERS  
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**CLEVELAND'S  
HOTEL HOLLENDEN**  
ROBERT P. JOYCE, GENERAL MANAGER

## The Why and How of Central Stores

(Continued from page 217)

We would be better off operating a stores system to cover the classes of commodities that we are best equipped to handle rather than trying to embrace *all* of the commodities that conceivably could be stored in our institution without proper facilities and personnel.

It would be shortsighted to conclude this discussion without discussing the costs of inventory operations. The possible savings to be achieved by quantity purchases must always be evaluated against the costs of operating stores facilities for the particular item. Space is required for storage; also, warehouse personnel and record keeping personnel. The items should be insured, particularly if we have heavy inventory. And we must not forget that the money which we have tied up in inventory could be earning interest for the institution. The obsolescence factor has already been noted. Delivery costs must not be forgotten since it is a part of the stores service that must be provided.

Dr. Howard Lewis cites in his book on "Procurement, Principles and Cases" a Department of Commerce study stating that inventories cost business firms approximately 20% per year of their value. This seems rather high to me, and certainly would be high for educational institutions since we do not have the tax problem that is faced by industry. Somewhere around 10 or 12%, however, would probably be a good figure to use for a well administered storeroom. If it is not well administered, the cost could skyrocket far beyond that point.

1 1 1

## Military Procurement Dollar

(Continued from page 109)

question arises. Here again, in those fields in which big business can and does under-price small, all other factors being equal, big business will receive the award in a negotiated procurement.

Within the limits of the law, and sometimes by skirting the limits, the military Departments have been able to assist small business. For example, it is the policy and practice of the military Departments to step-ladder quantities, where possible, on invitations for bids. This dividing of one large procurement

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into several small ones enables small business to bid where it would not otherwise be able to do so. Mentioned previously was the policy of awarding automatically to small business instead of by lot in cases where a small business and a big business have submitted tie low bids.

Procurement information offices have been established to assist the small businessman in his search for Government business. Monthly publications and weekly press releases are issued listing contractors who have received Government contracts, in order to assist small business in obtaining subcontracts. Each of the military Departments has published a pamphlet describing the workings of its own respective procurement system and listing the names and locations of military purchasing offices for various types of items. In one case an award was made to small business in an advertised procurement when big business was the low bidder; any contemplated repetition of this action was promptly squelched by the Comptroller General. The military have left few administrative stones unturned in their attempts to aid small business.

Economic circumstances channel a large portion of the military procurement dollars into the coffers of big business. Consider, in addition to these economic circumstances, the legal limitations peculiar to Government procurement and relate the whole to the amount of the military procurement dollar actually awarded to small business. The revelation is a startling one:

Economic and legal limitations considered, small business obtains, directly and indirectly, a lion's share of the military's business.

Economic and legal restrictions limit the amount of military procurement dollars that can be awarded to small business. Since "fair proportion" is a political chameleon, it will always be a variable of unknown dimensions. However, small business is obtaining a substantial share of the military dollar. If the total of the present direct and indirect benefits to small business of the military procurement dollar is not a "fair proportion", only Congress, through legislation enabling subsidization, can effect any increase in that total. It is questionable whether a program of subsidization of small business could be administered by the military Services without the sacrifice of military efficiency.



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it in all our worm-gear, hypoid, and two speed axles. This enabled us to change our oil-change period from 15,000 miles to 40,000 and on some applications, depending on speeds and temperatures encountered, we raised the change period to 60,000 miles, or approximately once a year. Our overhaul periods were stretched from 50,000 to 100,000 miles, and repair parts bill cut 50% with the increased mileage."

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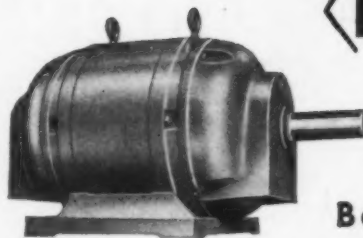
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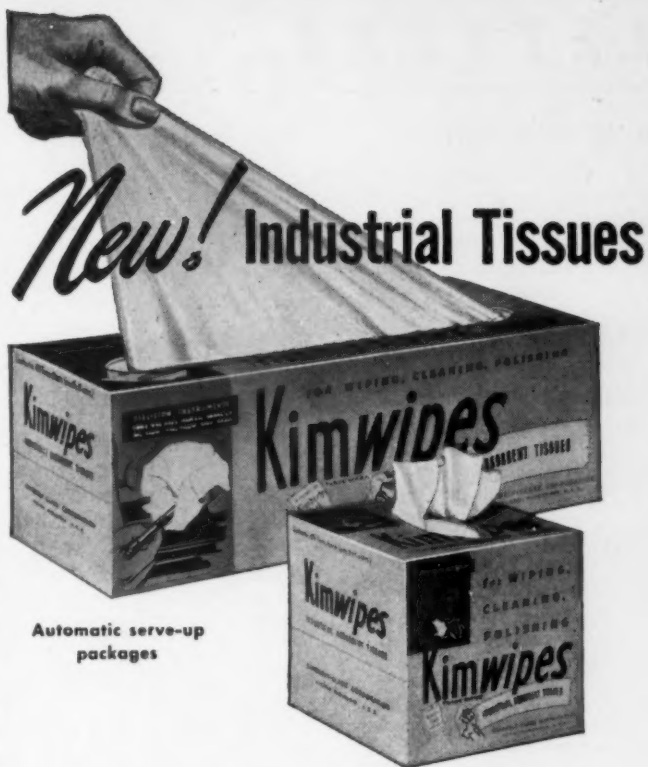
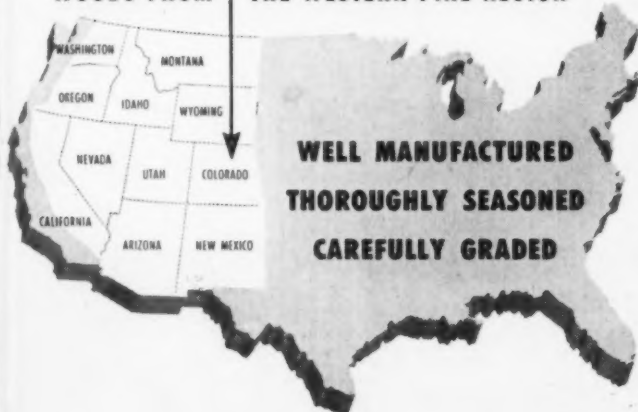
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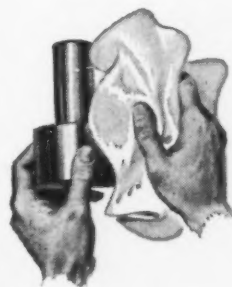


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# LETTERS . . .

## JUNE ISSUE BEST

I congratulate you for the June issue. It contains very valuable and interesting information.

F. M. Roos, Purchasing Agent  
Consolidated Car-Heating Co.,  
Albany, N. Y.

## TERRIFIC

Your June issue is terrific! Please send two more copies immediately and bill to me.

M. Clemens, Purchasing Agent  
Rosenberg Bros. & Co.  
San Francisco

## WHO SIGNS ORDERS?

We are in the process of revising the form of our purchase order here at Kodak Park. In this connection, we have been considering the question "who should sign our purchase orders."

At the present time, three members of our Purchasing Department supervision are authorized to sign purchase orders. We are considering extending this authorization to permit our buyers to sign and forward purchase orders up to a certain maximum value direct to our suppliers.

We realize that individual companies have to make their own decisions in connection with this question based on their own specific requirements and the nature of their organizations.

However, we are interested in what the "other fellow" is doing and wonder if you could refer us to any recent article or survey which would indicate current thinking or trends in industry in connection with this problem.

J. E. Doyle,  
Asst. to Director of Purchasing  
Eastman Kodak Co.  
Rochester 4, N. Y.

● We know of no survey or study specifically directed to this point. However, we have rather an extensive file of purchasing department forms from many companies, and a check on the signature policy indicated on purchase orders may give some indication of current practice. A wide variety of companies, large and small, is included. It is not a scientific sampling, but it could be regarded as a representative cross-section.

Among 114 purchase orders, 78 or slightly more than two-thirds, indicate the particular signature required—Purchasing Agent, Assistant Purchasing Agent, Director of Purchases, etc. Presumably, in some of these cases, the signature would be affixed by rubber stamp or initialed by an authorized assistant, but in any case a particular officer is designated as the person whose signature is required.

On 36 of these forms, or a little less than one-third, the printed sig-

nature consists of the company name (with the words "Purchasing Department" added in 11 cases) and a line for written signature but without any indicated individual or title to designate specific authorization to sign. This group includes several rather large organizations. It could be assumed, since a standard numbered form is used, that all such purchase orders are issued through the purchasing department, but that there is a greater latitude in the authorization to sign.

Regarding the limitation on size of orders for which certain signatures are authorized, this would necessarily be a matter of internal department administration. If an order should come into question on the technical grounds that the authority had been exceeded, a vendor could not reasonably be expected to have knowledge of the limitation, nor to check on individual orders, particularly if previous orders bearing that signature had been honored.—Ed.

## PURCHASE ORDERS LEGAL ASPECTS

In our line of business, we have, on some jobs, given out work and materials on sub-contracts for contractors to furnish and install electrical, plumbing, and sheet metal work. In some cases our company is not protected using our plan.

On our order we state, "This order is given subject to terms and conditions attached. This order is not in effect until one copy of Terms and Conditions is signed and returned by the Contractor."

We would like to incorporate these terms and conditions on a quotation form and, when accepted by our company, acknowledge on our present purchase order referring to quotations, etc. There are legal angles on this subject and we thought you may give us some suggestions along this line of thinking.

V. William Smith, Purchasing Agent  
Goodling Electric Co., Inc.  
York, Pa.

● We can answer this only in general terms, since the interpretation and application of legal phrases in contract agreements depends on the circumstances of their use and may sometimes be varied by the circumstances in an individual case. This is a matter on which you should have the advice of your own legal counsel who is thoroughly familiar with your operations and problems and who would be prepared to defend your position in the event of any controversy.

You are at liberty to incorporate any desired conditions in your con-

tract provided they are not unilateral or one-sided (the purchase order commitment to accept and pay for goods and services usually satisfies this condition), and that they are neither unreasonable nor illegal in themselves, and that the vendor or subcontractor has clear notice of the terms and conditions imposed.

To incorporate these terms and conditions in the quotations and purchase orders, the usual practice is to have them printed on the form itself. This can be done on the reverse side of the form, but it should be definitely included in the agreement by having a statement prominently printed on the face of the form, to the effect that "This quotation (or purchase order) is subject to the terms and conditions on the reverse side of this sheet." This notice should be placed above the signature in either case. The terms and conditions on the quotation and the purchase order must of course be identical, and a full copy should be in possession of both parties. For this reason it is well to have the conditions printed on both the original copy of the purchase order that goes to the vendor and on the office file copy that you retain, so that the documents covering the purchase agreement are complete and identical. In the absence of a formal quotation on your form, or a signed acceptance by your vendor or subcontractor, any deliveries of goods or starting of work as specified in your order will usually be construed in court as evidence of acceptance of the order, including such terms and conditions as are incorporated in it.—Ed.

## P. A. VIEWS ON IMPORTS

Will you please send me the issue of PURCHASING which contains a nationwide poll of purchasing agents on the problem of imports.

Curtis J. Hoxter,  
Director of Press Relations  
United States Council of the  
International Chamber of Commerce, Inc.  
New York 17, N. Y.

● It's a pleasure. This survey was reported on page 85 of our March issue.—Ed.

## PURCHASING TRAINING AIDS

We have found Mr. Heinritz' book "Basic Principles of Purchasing" most useful in our training program for personnel.

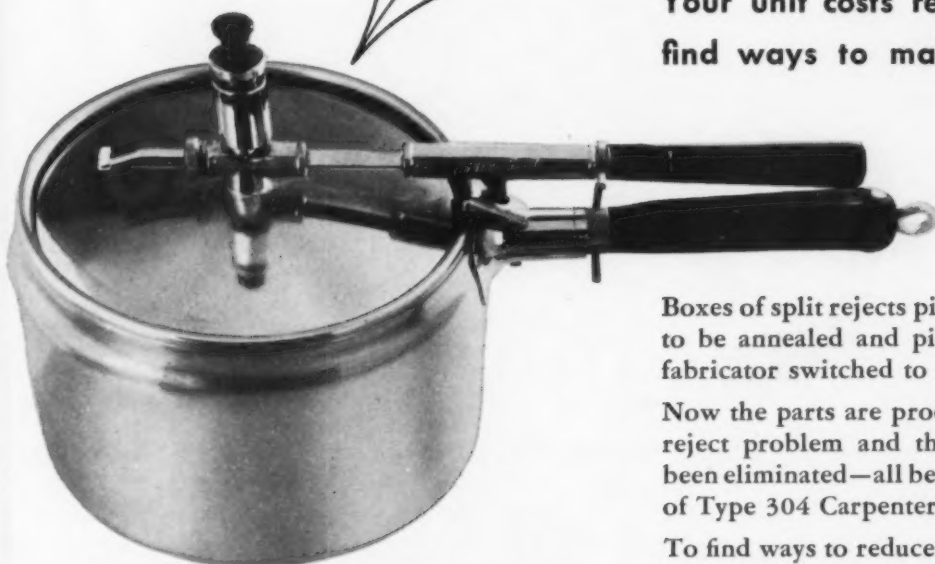
C. L. Rice, Director of Purchases  
Owens-Illinois Glass Co.  
Toledo 1, Ohio



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*when they changed to Carpenter Stainless Tubing*

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Pressure cooker parts made from 1 1/4" x 16 ga. Carpenter Stainless Tubing, Type 304. Expansion approx. 60% in first operation. Second operation takes expansion to 2 1/4" O.D. Entire job is done cold with no intermediate anneal.

Boxes of split rejects piled up on the floor. Each part had to be annealed and pickled between draws. Then the fabricator switched to Carpenter Stainless Tubing.

Now the parts are produced 32-per-minute, there is no reject problem and the annealing-pickling set-up has been eliminated—all because of the quality and uniformity of Type 304 Carpenter Stainless Tubing.

To find ways to reduce your unit production costs, drop us a line or call your Carpenter Stainless Tubing Distributor. Put our experience to work on *your* problems. THE CARPENTER STEEL COMPANY, ALLOY TUBE DIVISION, 122 Springfield Road, Union, N. J.

**RUSH SERVICE** on your orders is an everyday habit with Carpenter Stainless Tubing Distributors.

### Stainless Tubing Data for Quick Reference . . .



A note on your company letterhead will start this handy Carpenter Stainless Tubing File on its way to you. It contains information on physical constants, sizes and shapes, corrosion resistance, etc. Write today for your copy.

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# Advertisers IN THIS ISSUE

A	
Abbott Ball Company, The .....	220
Acme Steel Co. ....	213
Aetna Ball & Roller Bearing Company .....	222
Air Express Div., Railway Express Agency, Inc. ....	172
Air Reduction Sales Co. & Subsidiaries .....	182
Allegheny Ludlum Steel Corp .....	50
Allen Mfg. Co. ....	142
Allied Oil Company, Inc. ....	54
Allis-Chalmers Manufacturing Co. ....	29
Alloy Steel Products Co. ....	36
Aluminum Company of America .....	
Die Castings .....	221
Screw Machine Products .....	26
American Brake Shoe Co., National Bearing Div. ....	61
American Brass Co., The .....	180
American Chain Div. ....	132
American Chain & Cable Co., Inc. ....	66, 132, 148
American Die Casting Institute .....	133
American Optical Co. ....	34
American Seating Co. ....	186
American Steel & Wire Co. ....	202, 203
Amplex Mfg. Company .....	191
Anaconda Copper Mining Co. & Subsid. Cos. ....	180, 181
Atlas Screw & Specialty Co. ....	192

B	
Babcock & Wilcox, Refractories Div. ....	195
Baldor Electric Co. ....	25
Baldwin Locomotive Works, The .....	184, 185
Bead Chain Mfg. Co. ....	130
Bemis Bro. Bag Co. ....	62
Bendix Aviation Corp., Skinner Purifiers Div. ....	194
Bethlehem Steel Co. ....	230
Billings & Spencer Co. ....	219
Binney & Smith Co. ....	170
Black & Decker Mfg. Co. ....	113
Black, Sivalis & Bryson, Inc. ....	125
Blaw-Knox Co. ....	168
Bridgeport Brass Co. ....	143
Briggs & Stratton Corp. ....	129
Bristol Brass Corp. ....	229
Brown-Bridge Mills, Inc. ....	221
Brown & Sharpe Mfg. Co. ....	49
Brownville Paper Co. ....	151
Bussmann Mfg. Co. ....	10, 11

C	
Carborundum Co., The .....	171
Carpenter Alloy Tube Div. ....	225
Central Paper Company .....	186
Century Electric Company .....	3
Chase Brass & Copper Co., Inc. ....	189
Clark Bros. Bolt Co. ....	136
Classified Advertising Section .....	227
Cleveland Cap Screw Co. ....	178
Cleveland Container Co., The .....	196
Cleveland Twist Drill Co. ....	68
Colorado Fuel & Iron Corp., Wickwire Spencer Steel Div. ....	169
CONOVER-MAST PURCHASING DIRECTORY .....	219
Continental Foundry & Machine Co. ....	38
Continental Rubber Works .....	216
Coto-Coil Co., Inc. ....	215
Crane Company .....	14
Cunningham Co., M. E. ....	221

D	
Darnell Corp., Ltd. ....	122
Detecto Scales, Inc. ....	220
Disston & Sons, Inc., Henry .....	167
Dow Chemical Company, The .....	12
Dravo Corp. ....	176

E	
Eagle Mfg. Co. ....	170
Eagle-Pitcher Sales Co., The .....	176
Eastman Kodak Company .....	126
Eaton Mfg. Co. ....	115
Eberhard-Faber Pencil Co. ....	152
Elastic Stop Nut Corp. of America .....	197
Electric Auto-Lite Co. ....	46, 119
Electric Storage Battery Co. ....	44
Erie Bolt & Nut Co. ....	183
Esleek Mfg. Co. ....	160
Etching Co. of America .....	211
Ex-Cell-O Corporation .....	17

F	
Federated Metals Div., Amer. Smelting & Refining Co. ....	176
Fiske Bros. Refining Co., Lubriplate Div. ....	218
Fuller Brush Co. ....	204

G	
Garlock Packing Co. ....	57
Gates Rubber Co. ....	40
Gaylord Container Corp. ....	6
General Box Co. ....	23
General Electric Co. ....	
Apparatus Div. ....	51, 52
Electronics Dept. ....	41
Lamp Div. ....	123
Water Coolers .....	30
Georgia-Pacific Plywood & Lumber Co. ....	137, 138, 139, 140
Gerson-Stewart Corporation .....	183
Globe Steel Tubes Co. ....	187
Goodrich Co., B. F. ....	4, 47
Gould Storage Battery Corp. ....	163
Graybar Electric Co., Inc. ....	64
Great Lakes Steel Corp. ....	111
Grinnell Co., Inc. ....	177

H	
Hill-Clark-Francis Ltd. ....	217
Hinde & Dauch Paper Co. ....	37
Holliston Mills, Inc., The .....	212
Hotel Hollenden .....	219
Hotel Raleigh .....	213
Houghton & Company, E. F. ....	131
Hudson Pulp & Paper Corporation .....	209
Hy-Pro Tool Company .....	212

I	
Independent Pneumatic Tool Co. ....	206
Inland Steel Company .....	5

J	
Jenkins Bros. ....	4th Cover

K	
Kearney & Trecker Corp., Walker-Turner Div. ....	9
Keasbey & Mattison Co. ....	8
Kempsmith Machine Company .....	144
Kex National Service .....	188
Kidde & Co., Inc., Walter .....	175
Kimberly-Clark Corp. ....	223
Koh-I-Noor Pencil Co., Inc. ....	160

L	
Ladish Co. ....	127
Lavalley & Ide, Inc. ....	136
Leschen & Sons Rope Co., A. ....	31
Lord Baltimore Hotel .....	208
Lubriplate Div., Fiske Bros. Refining Co. ....	218
Lunkenheimer Co. ....	27
Lyon Metal Products Inc. ....	39

M	
Mack Molding Co. ....	220
Master Electric Co. ....	35
Milwaukee Dustless Brush Co. ....	146
Minneapolis-Honeywell Regulator Co. (Industrial Div.) .....	32
Minnesota Mining & Mfg. Co. ....	161
Missouri-Kansas-Texas Lines .....	201
Morris Co., Bert M. ....	152

N	
National Bearing Div., Amer. Brake Shoe Co. ....	61
National Supply Co., Spang-Chalfant Div. ....	207
Nicholson File Co. ....	18
Norton Co. ....	121

O	
Oakite Products, Inc. ....	208
Ohio Brass Co. ....	193
Osborn Mfg. Co. ....	7
Oxford Filing Supply Co. ....	152

P	
Page Steel & Wire Div. ....	148
Parker-Kalon Corp. ....	16
Pawtucket Mfg. Co. ....	122
Pennsylvania Flexible Metallic Tubing Co. ....	60
Pittsburgh Tag Co. ....	132
Plymouth Cordage Co. ....	147
Powell Co., William .....	59
Pyrene Mfg. Co. ....	210

R	
Railway Express Agency, Inc. ....	214
Railway Express Agency, Inc., Air Express Div. ....	172
Remington Rand, Inc. ....	155, 158, 159
Republic Steel Corp. ....	33
Revere Copper & Brass Inc. ....	124
Reynolds Metals Company .....	135
Richardson Co., The .....	128
Ridge Tool Co. ....	190
Riegel Paper Corp. ....	28
Riegel Textile Corp. ....	205
Rising Paper Co. ....	152
Roberts Rubber Co., Weldon .....	160
Roebling's Sons Co., John A. ....	45, 58
Rome Cable Corp. ....	226
Ryerson & Son, Inc., Joseph T. ....	70

S	
Sandvik Steel, Inc. ....	56
Scovill Manufacturing Co., Waterville Div. ....	217
Security Steel Equipment Corp. ....	150
Set Screw & Mfg. Co. ....	208
Sheppard Envelope Co. ....	154
Spang-Chalfant Div., National Supply Co. ....	207
Speedi-Dri Corp. ....	134
Sponge Rubber Products Co. ....	173
Square D Company .....	21
Standard Pressed Steel Co. ....	170, 222
Stanley Works, The .....	186
Stein Mfg. Co., William .....	136
Sterling Electric Motors, Inc. ....	196
Sterling Wheelbarrow Company .....	130
Sun Oil Co. ....	199
Superior Foundry, Inc. ....	174

T	
Texas Company .....	2nd Cover
Thermoid Co. ....	165
Thompson & Son Company, The Henry G. ....	126
Threadwell Tap & Die Co. ....	200
Timken Roller Bearing Co. ....	63
Tri-Lok Company .....	176
Tube-Turns, Inc. ....	43

U	
U. S. Radium Corp. ....	144
U. S. Rubber Co. ....	179

V	
Valley Electric Corp. ....	222
Veeder-Root, Inc. ....	42
Victor Saw Works, Inc. ....	148

W	
Waldes Kohinoor, Inc. ....	145
Walker-Turner Div., Kearney & Trecker Corp. ....	9
Wallingford Steel Co. ....	141
Walworth Co. ....	48
Webster Co., F. S. ....	154
West Disinfecting Co. ....	53
Western Pine Association .....	223
Westinghouse Electric Corp. ....	3rd Cover
Wickwire Spencer Steel Div. of The Colorado Fuel & Iron Corp. ....	169
Willson Products, Inc. ....	192

Y	
Youngstown Sheet & Tube Co. ....	117

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